Hospital Library

ANNUAL MEETING NUMBER

The New England JOURNAL of MEDICINE

FORMERLY THE BOSTON MEDICAL AND SURGICAL JOURNAL

Official Organ of The Massachusetts Medical Society
The New Hampshire Medical Society — The Vermont State Medical Society
The New England Surgical Society — The Boston Surgical Society, Inc.
The New England Pediatric Society — The New Hampshire Surgical Club
The New England Obstetrical and Gynecological Society
And The Neisserian Medical Society of Massachusetts

OWNED AND PUBLISHED BY THE MASSACHUSETTS MEDICAL SOCIETY

Volume 206 Number 19 | Domestic $6 per Annum, 25c per Copy Canada $7.04, Foreign $7.56 | MAY 12, 1932 | Published Weekly in Boston at 8 The Fenway

CONTENTS

Carcinoma of the Rectum. *Edwin Parker Hayden.* 979

THE MASSACHUSETTS MEDICAL SOCIETY

Program of the One Hundred and Fifty-First Anniversary 992

Hemophilia: The Anaphylactic Treatment of Acute Emergencies by Passive Sensitization. *R. Cannon Eley* 998

Can Vital Statistics Be Used to Measure the Quality of Maternity Care? *James Raglan Miller* 999

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

Case 18191—Pain in the Front of the Chest of One and One Half Hours' Duration. *Richard C. Cabot, Maurice Fremont-Smith* and *Tracy B. Mallory.* Case 18192 — Abdominal and Pulmonary Signs and Symptoms Accompanying Acute Rheumatic Fever. *Forrest A. Harrison, George W. Holmes, Tracy B. Mallory, Harold L. Higgins, Paul D. White, T. Duckett Jones* and *Howard B. Sprague* 1005

EDITORIALS

The Annual Meeting 1012
Publicity with Respect to Health 1012
This Week's Issue 1013

(Contents continued on next page)

Revised edition -- Stevens' Practice

The great amount of new material which had to be incorporated in the **revised (3rd) edition** made it necessary to reset the entire book. In doing so Dr. Stevens embraced the opportunity of revising every line, deleting obsolete material, rewriting whole sections to make this edition reflect Medicine as it is practiced today.

NEW SUBJECTS

Psittacosis
Toxoid prophylaxis of diphtheria
Immunization to scarlet fever
Immunization to measles
Antitoxin treatment of erysipelas
Acute polyneuronitis
Vaccinal encephalitis
Chronic duodenal stasis and obstruction
Massive collapse of lung
Hypoglycemia of endogenous origin
Hyperparathyroidism
Hypoparathyroidism
Lipoid-cell splenomegaly of Niemann-Pick
Spontaneous subarachnoid hemorrhage
Family and hereditary atrophy of optic nerve

REWRITTEN

Jaundice
Chronic cholecystitis
Acute pancreatitis
Chronic ulcerative colitis
Idiopathic dilatation of colon
Agranulocytic angina
Creatinuria
Lipoid nephrosis
Pernicious anemia
Sickle-cell anemia
Acute leukemia
Hodgkin's disease
Erythremia
Gaucher's disease
Banti's disease
Treatment of bronchiectasis
Essential arterial hypotension
Thrombo-angiitis obliterans
Occlusion of coronary arteries
Congenital heart disease
Scleroderma
Rickets
Pellagra
Sprue
Thyroiditis
Hypopituitarism
Disseminated sclerosis
Osteitis fibrosa cystica
Undulant fever
Treatment of amebic dysentery
Verruca peruana
Glandular fever
Milk sickness
Coccidioidal granuloma
Treatment of uncinariasis

8vo of 1150 pages, illustrated. By A. A. STEVENS, M.D., Professor of Applied Therapeutics, University of Pennsylvania. Cloth, $8.00 net.

W. B. SAUNDERS COMPANY **Philadelphia and London**

Entered at the Postoffice at Boston as Second Class Matter

CONTENTS

(Continued)

BOOK REVIEWS
Foods in Health and Disease. Lulu G. Graves..... 1026
Fractures of the Jaws. Robert H. Ivy and Lawrence Curtis 1026
Psychology and Psychiatry in Pediatrics: The Problem. Report of the White House Conference on Child Health and Protection..... 1026

CORRESPONDENCE
A Defense of Osteopathy. Frank M. Vaughan and Perrin T. Wilson..... 1017
Operation for Carcinoma of the Rectum. Richard B. Cattell 1018

MISCELLANY
Amsterdam University Confers Awards..... 1015
Another Doctor Convicted of Fraud in Connection with Claims for Damages..... 1015
Anti-Vivisection Propaganda 1016
The Appointment of Dr. C. Stanley Raymond..... 1015
Attendance at the State Meeting of the Massachusetts Dental Society..... 1017
A Drug Claimed to Be Valuable in Amebic Infections 1015
The Economic Problems of the Graduate Nurse.... 1004
Efforts Toward Narcotic Control..... 991
Excessive Eating and Exercise..... 1016
The Floating Hospital Honors Its Donors..... 1017
The Importance of Sleep in Promoting Longevity.. 1015
The Maternal Mortality Reported by the New York City Lying-In Hospital..... 1015
Mortality Rates 1017
Notes from the American Medical Association Meeting 1017
Pictorial Exhibit of the New York City Cancer Committee 991
Planning for the Use of Serum in Cases of Poliomyelitis 1016
A Radio Message Prepared and Sponsored by the Committee on Public Education of the Massachusetts Medical Society for the Department of Public Health. Growing Strong Teeth..... 1013
Relation of High Voltage Rays to Cancer..... 1016
Studies of Epilepsy..... 1016
A Study of the Secret of a Cancer Cell..... 1016
Summer Courses for "Sight-Saving" Classes..... 991
The Toll of Blindness..... 1015

NOTICES 1018

RECENT DEATHS..... 1018

REPORTS AND NOTICES OF MEETINGS..... 1019

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES 1025

The Massachusetts Medical Society

The next Annual Meeting of the Massachusetts Medical Society will be held at the Hotel Statler, Boston, on Wednesday, Thursday and Friday, June 8, 9, and 10, 1932.

OFFICERS AND STANDING COMMITTEES ELECTED BY THE COUNCIL, JUNE 9, 1931

PRESIDENT: HALBERT G. STETSON, 39 Federal Street, Greenfield.
VICE-PRESIDENT: THOMAS H. McCARTHY, 142 Main Street, Brockton.
SECRETARY: WALTER L. BURRAGE, 182 Walnut Street, Brookline.
TREASURER: CHARLES S. BUTLER, 257 Newbury Street, Boston.

STANDING COMMITTEES FOR 1931-1932

COMMITTEE OF ARRANGEMENTS
T. H. Lanman, *Chairman;* F. H. Colby, G. P. Reynolds, W. M. Shedden, William R. Morrison.

COMMITTEE ON PUBLICATIONS
Homer Gage, *Chairman;* J. W. Bartol, R. I. Lee, R. B. Osgood, E. W. Taylor.

COMMITTEE ON MEMBERSHIP AND FINANCE
D. N. Blakely, *Chairman;* Gilman Osgood, G. C. Caner, J. E. Fish, H. F. Newton.

COMMITTEE ON ETHICS AND DISCIPLINE
David Cheever, *Chairman;* W. D. Ruston, S. F. McKeen, A. C. Smith, R. L. DeNormandie.

COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS
P. P. Johnson, *Chairman;* H. P. Stevens, C. H. Lawrence, C. A. Sparrow, E. S. Calderwood.

COMMITTEE ON STATE AND NATIONAL LEGISLATION
H. G. Stetson, *Chairman;* T. J. O'Brien, F. E. Jones, A. W. Marsh, Shields Warren.

COMMITTEE ON PUBLIC HEALTH
Dwight O'Hara, *Chairman;* E. F. Cody, F. G. Curtis, G. M. Hoeffel, G. D. Henderson.

COMMITTEE ON MALPRACTICE DEFENSE
F. G. Balch, *Chairman;* E. D. Gardner, F. B. Sweet, R. F. Watkins, A. W. Allen.

OFFICERS OF THE SECTIONS FOR 1932

ELECTED BY THE SECTIONS

The street addresses may be obtained from the Annual Directory

SECTION OF MEDICINE
Chairman, H. L. Smith, Springfield; *Secretary,* Ralph Ellis, Worcester.

SECTION OF SURGERY
Chairman, Richard Miller, Boston; *Secretary,* A. G. Rice, Springfield.

SECTION OF TUBERCULOSIS
Chairman, S. H. Remick, Waltham; *Secretary,* Roy Morgan, Westfield.

SECTION OF PEDIATRICS
Chairman, Edwin T. Wyman, Boston; *Secretary,* Joseph Garland, Boston.

SECTION OF OBSTETRICS AND GYNECOLOGY
Chairman, F. J. Lynch, Boston; *Secretary,* F. A. Pembert, Boston.

SECTION OF RADIOLOGY AND PHYSIOTHERAPY
Chairman, R. D. Leonard, Melrose; *Secretary,* E. H. Trowbri, Worcester.

OFFICERS OF THE DISTRICT MEDICAL SOCIETIES

ELECTED BY THE DISTRICT MEDICAL SOCIETIES BETWEEN APRIL 15 AND MAY 15, 1931

The street addresses of the officers may be obtained from the Annual Directory

BARNSTABLE—*President,* G. H. Gray, Hyannis; *Vice-President,* J. L. Chute, Osterville; *Secretary,* J. I. B. Vail, Hyannis; *Treasurer,* H. B. Hart, Yarmouthport; *Librarian,* E. E. Hawes, Hyannis.

BERKSHIRE—*President,* P. J. Sullivan, Dalton; *Vice-President,* A. C. England, Pittsfield; *Secretary,* H. J. Downey, Pittsfield; *Treasurer,* C. T. Leslie, Pittsfield.

BRISTOL NORTH—*President,* B. M. Latham, Mansfield; *Vice-President,* F. V. Murphy, Attleborough; *Secretary,* C. B. Kingsbury, Taunton; *Treasurer,* J. V. Chatigny, Taunton.

BRISTOL SOUTH—*President,* G. C. King, Fall River; *Vice-President,* J. M. Salles, New Bedford; *Secretary and Treasurer,* Charles Shanks, New Bedford.

ESSEX NORTH—*President,* H. H. Nevers, Lawrence; *Vice-President,* O. P. Mudge, Amesbury; *Secretary and Treasurer,* E. S. Bagnall, Groveland.

ESSEX SOUTH—*President,* A. E. Parkhurst, Beverly; *Vice-President,* R. E. Foss, Peabody; *Secretary,* R. E. Stone, Beverly; *Treasurer,* Andrew Nichols, 3rd, Danvers; *Librarian,* C. M. Cobb, Lynn.

FRANKLIN—*President,* H. M. Kemp, Greenfield; *Vice-President,* A. E. Johnson, Jr., Greenfield; *Secretary and Treasurer,* Charles Moline, Sunderland.

HAMPDEN—*President,* G. L. Schadt, Springfield; *Vice-President,* F. H. Allen, Holyoke; *Secretary and Treasurer,* H. L. Smith, Springfield.

HAMPSHIRE—*President,* C. H. Wheeler, Haydenville; *Vice-President,* M. E. Cooney, Northampton; *Secretary and Treasurer,* F. E. O'Brien, Haydenville; *Librarian,* Jane B. Armstrong, Northampton.

MIDDLESEX EAST—*President,* J. H. Blaisdell, Winchester; *Vice-President,* C. W. DeWolf, Wakefield; *Secretary,* A. R. Cunningh, Winchester; *Treasurer,* Richard Dutton, Wakefield; *Librarian,* J. Wilcox, Woburn.

MIDDLESEX NORTH—*President,* F. E. Varney, North Chelmsfo; *Vice-President,* Pierre Brunelle, Lowell; *Secretary,* T. A. Stan, Lowell; *Treasurer,* M. D. Bryant, Lowell; *Librarian,* P. J. Meeh, Lowell.

MIDDLESEX SOUTH—*President,* F. W. Gay, Malden; *Vice-Presid,* A. H. Blake, Somerville; *Secretary,* A. A. Levi, Cambridge; *Treasu,* Edward Mellus, Newton.

NORFOLK—*President,* W. B. Keeler, Roxbury; *Vice-President,* S. Curran, Dorchester; *Secretary,* F. S. Cruickshank, Roslindale; *Tr,* urer, G. W. Kaan, Sharon.

NORFOLK SOUTH—*President,* M. T. Sweeney,* Quincy; *Vice-P,* dent, W. J. MacCausland, Quincy; *Secretary, Treasurer and Libra,* N. R. Pillsbury, South Braintree.

PLYMOUTH—*President,* J. J. McNamara, Brockton; *Vice-Presid,* C. G. Miles, Brockton; *Secretary,* G. A. Moore, Broekton; *Treasu,* A. C. Smith, Brockton; *Librarian,* J. H. Weller, Bridgewater.

SUFFOLK—*President,* G. S. Derby,* Boston; *Vice-President,* Reg, Fitz, Boston; *Secretary,* L. S. McKittrick, Boston; *Treasurer,* J, Rock, Boston.

WORCESTER—*President,* E. L. Hunt, Worcester; *Vice-Presi,* E. R. Leib, Worcester; *Secretary,* E. C. Miller, Worcester; *Treas,* R. J. Ward, Worcester; *Librarian,* A. C. Getchell, Worcester.

WORCESTER NORTH—*President,* H. R. Nye, Leominster; *Vice-P,* dent, R. A. Rice, Fitchburg; *Secretary,* C. H. Jennings, Fitchb, *Treasurer,* F. H. Thompson, Jr., Fitchburg.

*Deceased.

Fellow Members! We want your support.

The New England
Journal of Medicine

VOLUME 206 MAY 12, 1932 NUMBER 19

CARCINOMA OF THE RECTUM

A Report of Eighteen Radical Resections, With An Historical Review

BY EDWIN PARKER HAYDEN, M.D.*

IT is the purpose of this article to report 18 cases of cancer of the rectum in which radical resection was performed. Of these, 13 were private cases and 5 were operated upon from the wards of the Massachusetts General Hospital. The group consists of those cases in which radical removal was deemed possible, was offered to the patient and accepted as his only chance of cure, and in which, fortunately, exploration revealed no contraindications to a complete operation. The series does not include cases which on external and rectal examination were considered operable, but which proved on exploration to have intra-abdominal metastasis to a degree that would have rendered a complete removal impossible, or an attempt inadvisable. Needless to say, also, the series does not include those cases in which, when first seen, the lesion had so obviously progressed beyond hope of cure that I performed only a colostomy with local anesthesia, or had recourse to palliative x-ray or radium treatment, with or without colostomy. There is much to be learned from every case of rectal cancer — in diagnosis, in judgment as to proper treatment, in the technical procedure, and in the aftercare of the patient. This particular group of 18 cases demonstrates a number of interesting points which will be brought out in the course of the paper. Before discussing them, however, it seems desirable to consider briefly some of the factors which have influenced the surgery of cancer of the rectum and lower sigmoid.

GENERAL CONSIDERATIONS

The difficulties to be encountered in removal of a growth in this part of the large bowel are quite apparent. The rectum is boxed in by bony structures posteriorly and laterally, while anteriorly the genitourinary organs lie in close proximity. A little more latitude can be taken in the female by removing the posterior vaginal wall and even the entire uterus if the growth has invaded it. In the male, though a part or even all of the prostate can be removed if necessary, the bladder and urethra must not be disturbed. In any case a dissection cannot go very far lateral to the ampulla of the rectum. Higher up, the walls of the true pelvis carrying the iliac vessels and ureters limit lateral dissection again. In addition to these anatomical considerations there are important physiological factors to be reckoned with. Can the rectum be removed with preservation of adequate sphincteric control without, at the same time, greatly increasing the likelihood of recurrence? If anal sphincter control cannot be maintained satisfactorily, is it better to have an incompetent anus at or near the normal location, or is it better to have the outlet in the left lower quadrant of the abdomen where it is not subject to pressure when sitting? Can the rectum be removed without interfering with bladder function and with the sexual life of the individual? Where do metastases occur, and how widely must an operation extend to embrace such areas?

A consideration of some of these questions, with varying opinions about them, forms the basis of the development of the modern abdominoperineal operations from the early, inadequate local excisions.

EVOLUTION OF THE ABDOMINOPERINEAL OPERATION

Jacques Lisfranc[1] was the first surgeon to record an operative procedure for cancer of the rectum in 1828. He read a paper before the French Academy of Medicine[2] in 1830 in which he described his method of removal and reported 9 cases operated in the years 1826-1830. He chose for operation only those in which he could pass his finger easily above the growth, and in which the growth was freely movable, showing it to be limited to the bowel. He made a circular incision around the anus and never removed more than 3 inches of bowel in the male or 5 inches in the female, as he had noted that when more was removed peritonitis ensued. Dissection was carried upward, keeping on the bowel wall, and at the above-mentioned height the bowel was cut across and the wound allowed to heal as best it could.

During the next 43 years nothing of consequence was written on this subject and no advance was made until Verneuil[3] in 1873, and Kocher[4], in 1874, increased the scope of the operation by removing the tip of the coccyx, thus gaining a little better exposure. Presumably

*Hayden—Assistant in Surgery, Harvard Medical School. For record and address of author see "This Week's Issue," page 1013.

they were able thereby to remove somewhat more bowel. Kocher also sutured the anus before operating—an important step in reducing sepsis. Several other Frenchmen published articles during the preceding years, but apparently the operation was not very popular.

To Sir James Paget is given credit for the first planned excision in England in 1878. The specimen is still in the museum at Barts.

W. Harrison Cripps[5], in 1884, published 3 cases of perineal excision, one of which was alive and well 4 years after operation. He wrote a Jacksonian Prize Essay on this subject.

It remained for Kraske[6], in 1885, to further increase the operative exposure by removal of part of the sacrum. The sphincter was preserved and the bowel pulled down and sutured to the anus.

Sacral operations continued in favor for many years after this, in fact were being done almost universally up to 1906. The Germans have never abandoned this procedure and still publish large series of cases operated by Kraske's method. It is of interest that the first abdominoperineal resection was performed in 1884 by Vincenz Czerny who finished up in the abdomen an operation he could not complete from below. There is no evidence that he or anyone else in the next few years used this procedure to any degree until, in 1897, Quenu (quoted from Mayo[7]) advocated it, and was supported in America by R. F. Weir, Robert Abby and Tuttle. Meanwhile sacral excisions were being done in England, as well as in France and Germany, during the 80's and 90's. Swinford Edwards, Allingham, and Cripps were prominent in the work. Allingham introduced inguinal colostomy in England. Handley had done some work with mucicarmine staining which showed that cancer cells traveled in the submucous lymphatics several inches or even a foot along the bowel wall. He therefore urged wide removal of apparently normal bowel beyond the growth. Cripps argued that an inch margin was all that was necessary, and that recurrence was in the connective tissue outside the bowel wall. A spirited argument ensued in which others joined, and the general impression at the time was that Handley had come out on top. These men were all operating posteriorly at that time, removing a greater or lesser amount of bowel, obtaining exposure by removal of coccyx or part of sacrum, either leaving the anus in its normal location or pulling the bowel out to form a new one more posteriorly. The recurrence rate was very high. If inguinal colostomy was done at all it was done with no intra-abdominal dissection, and the perineal excision continued to be inadequate.

In 1903, Miss Aldrich-Blake introduced the so-called abdomino-anal operation into England, according to Miles[9]. It consisted in a perineal dissection with some degree of abdominal dissection and a pulling of the bowel down to the anus. There was no real attempt to remove gland-bearing areas in any of the procedures up to this time.

C. H. Mayo[7], in 1906, reported a series of 26 cases operated during the preceding 5 years, by a modified Quenu procedure. He used this operation only for high growths, resecting low in the sigmoid and bringing the end out as an abdominal colostomy, preserving the sigmoid loop as a trap. Of the 26 cases 7 died, 19 recovered. Three were alive for 3 years, 5 for 2 years, 7 for 1 year, and 2 untraced. Mayo, at that time, was still using the sacral operation for low growths, and said his statistics agreed with Hartwell, who reported 46 sacral operations by 16 New York surgeons with 26% mortality and 16% alive at end of 3 years. He does not say "alive without recurrence".

Hausman (quoted by Mayo) had previously reported 112 autopsies in which the growth was limited to the bowel in 55, involved the lymphatics in 36, and showed generalized metastasis in 21.

In 1908, W. Ernest Miles[8] published a method of abdominoperineal resection which he had been using since 1906. Prior to 1906 he had performed only perineal operations—57 cases of which 54 had recurred. In this paper Miles reported 12 one-stage abdominoperineal resections with 5 deaths (41.8%). But his first three cases were, at the time of reading the paper, 3 year cures. The deaths he felt could have been avoided with increased experience. Miles emphasized in this paper the necessity of removing the pelvic mesocolon adequately, thereby eliminating a gland area very prone to involvement and one which had been neglected in all previous abdominoperineal operations.

In a subsequent contribution in 1910, Miles[9] laid even more firmly the basis on which our present surgery of this disease is founded. Logically and conclusively he reviewed his own progress in handling cancer of the rectum, based on a study of the extension of the disease as found postmortem, and of the recurrences after operation. He demonstrated conclusively that metastasis may occur in one or all of three zones of spread, from a growth located anywhere in the rectum, and that therefore an adequate operation must eradicate all of these areas even though the primary growth be small. The smaller it is, and the earlier, the better the chance of cure. Thus he urged wide removal of entire pelvic mesocolon, all tissues mesial to the ureters and anterior to the iliac vessels, dissecting cleanly from the hollow of the sacrum, and from the posterior wall of the vagina, or bladder and prostate, finally including a wide removal of perianal skin, ischiorectal fat, and all of the levators, coccygei, and sphincters, en

masse. A permanent end colostomy always accompanied this procedure. Miles, in this article, reported 26 cases, in which he had performed his one-stage abdominoperineal resection. There were 10 deaths, from 24 hours to 12 days postoperative, and 12 patients survived without disease anywhere from several months to 3½ years. Of the remaining 4, 2 had been very recently operated, 1 died 13 months after operation without evidence of recurrence, and 1 had disappeared.

W. J. Mayo[10], in May 1910, reported before the American Surgical Society 120 resections, from the Mayo Clinic, covering a period of 12 years, 1897 to 1909. These were done by a variety of methods, 94 by the perineal route alone, and 26 by the abdominoperineal method, of which number only 6 were given a permanent colostomy. In the other 20 the sigmoid was pulled down to the anus. The total series mortality was 16%. Of 60 operated over 3 years previously 13 were alive and well. Mayo concluded that the abdominoperineal approach was a step in advance because it allowed inspection and removal of intra-abdominal gland-bearing areas.

In 1912 W. J. Mayo[11] reported another series of 71 cases done since the close of the previous series. A pronounced shift from the perineal to the abdominoperineal method marked the work of these 2 years. Thus only 27 cases were done by the former route, while 44 were operated by the abdominoperineal method. In the 44 cases, there were 14 single stage operations with 5 deaths. In 4 cases the sigmoid was pulled to the anus, while 10 were given left rectus colostomies. Thirty cases were handled by preliminary end colostomy, placing the inverted distal end of gut below the peritoneal floor, and secondary posterior resection. Four of these cases died. No dissection of the bladder or sacral regions was carried out in this two-stage procedure.

Thus, by 1910, Miles, in England, was definitely committed to the abdominoperineal method with abdominal colostomy, and the Mayos in this country were rapidly discarding the less efficient operations in favor of this procedure. The French, notably Hartmann, favored it, and only the Germans remained true to the teachings of Kocher and Kraske.

Although the one-stage abdominoperineal resection, as done by Miles, is ideal in its completeness, it has the disadvantages of carrying a fairly high mortality, when used in every case, and of being somewhat limited in its applicability. It is too severe an operation for many patients who are old, fat, or enfeebled for one cause or another. The natural outcome of this situation was an attempt on the part of several surgeons to devise graded procedures which would increase operability from around 33% to a higher figure.

TWO-STAGE OPERATIONS

W. J. Mayo[11], in 1912, was the first surgeon to report a two-stage procedure used in a number of cases. This consisted in a preliminary end colostomy, placing the inverted distal stump in the pelvis beneath flaps of peritoneum, and a perineal resection at a later date. Of 30 cases thus treated, only 4 died, a mortality of 13.3%. In his 14 single stage resections the mortality had been 35%—a striking difference. Miles' mortality had been 41.8% in his first 12 one-stage cases. It was quite apparent that a two-stage operation, except in selected cases, was a much safer procedure.

In 1915, Coffey[13] reported 8 cases in which he had performed end colostomy, and then, by fastening the inverted distal end of the sigmoid to the eye of a rectal tube passed through the anus up into it, he had pulled this end down inside the bowel, past the growth, and out the anus, gathering the peritoneum together in the pelvis over the invaginated stump. Twelve to 20 days later he resected perineally.

In 1921 and 1922 Coffey[14] described a two-stage procedure which he published in complete form in 1924. It can be varied according to the patient's individual requirements, but is based on the fundamental principle of the establishment of an extraperitoneal quarantine, with drainage of the distal stump between the first and second stages of the operation. In the male, the drain is brought out behind the bladder to the lower part of the incision extraperitoneally. In the female the pelvic space is drained through the posterior vaginal wall. His mortality was under 5%.

Jones[15], also in 1915, published his excellent two-stage procedure. After using the Mayo operation he had found that placing the inverted distal gut below peritoneum, in an area freshly dissected, and leaving it there a week or more, produced fatal sepsis in too many instances, due to bacterial invasion from the devitalized distal gut. He therefore devised a procedure whereby the gut is not sectioned in the abdomen, the superior hemorrhoidal vessels are tied and cut, but the sigmoidal branches of the left colic artery are spared to preserve the vitality of the sigmoid. After extensive pelvic dissection, the sigmoid and pelvic mesocolon are crowded into the pelvis, peritoneal flaps gathered *around* the gut, which has *not* been sectioned, and loop colostomy is performed higher up in the descending colon. A week or 10 days later the perineal part of the operation is done entirely extraperitoneally, the distal segment of gut is sectioned just beneath the new peritoneal floor, and the end inverted. The principles of this procedure are thoroughly sound, it can be

applied in a wide range of cases, and with a considerable degree of safety.

Lockhart-Mummery[16], in 1920, published the details of his method of preliminary simple colostomy, followed a week or 10 days later by a very extensive posterior resection. He dissects widely, entering the peritoneal cavity anterior to the rectum, and pulls down the sigmoid, removing as much of the pelvic mesocolon as possible, cutting across the sigmoid high up and sewing the peritoneum together around the inverted end of gut which he thus leaves below the peritoneum and in the posterior wound. He feels that this operation has a much wider range of application than either the one- or two-stage abdominoperineal method, is safer, and that it is also productive of equally good end results.

Lahey[17], in 1930, reported a two-stage method which involves entering the abdomen at both stages. After exploration to determine operability, the gut is sectioned at a proper point, the proximal end brought out through an iliac incision for permanent colostomy, and the distal end to the surface at the lower end of the main incision. A week or more later this end is inverted, the abdomen entered, pelvis dissected, the free end placed below the peritoneum, and the whole specimen removed perineally.

Finally, Rankin[18], in 1931, described still another variation in which he performs end colostomy and merely drops the inverted distal end of gut into the peritoneal cavity at the first operation. Six weeks, or more, later, he approaches from the perineum, dissecting up to the peritoneum but not into it, encases the rectum in a rubber glove, and closes the perineal skin over it. He then opens the abdomen, creates pelvic peritoneal flaps, dissects the upper pelvis, removes the entire specimen through this incision, closes the peritoneum and abdomen, and then reopens and drains the perineal incision.

Gabriel, a year ago, told me he had been trying a perineal-abdominal resection, reversing the usual procedure, and Bartlett[19] described a method similar to this in 1931.

WHAT DOES A RADICAL OPERATION OFFER THE PATIENT?

The question is often asked, both by patient and by doctor, "Why submit to so big an operation, with its attendant risk, and with a permanent colostomy to care for afterward, when the chances of cure are small? Isn't it better to have radium or x-ray treatment?" The following facts answer these questions—

1. A complete operation offers practically the only chance of a cure, and the chance of cure is *by no means* small.

2. Cures on a 5 year basis, reported by several competent men, are as high as 72% in favorable cases, and 25% of all cases seen.

3. Even in cases where the growth recurs, the patient's life is prolonged by operation, and his subsequent days made much more comfortable by removal of the primary growth. There is always improvement in weight, appetite, and general condition for a period of time thereafter, even if subsequently the patient goes downhill.

4. A good colostomy is *not* intolerable. On the contrary, after the patient learns the proper technique for regulation of the bowels and care of the colostomy, he soon ceases to worry about its presence.

5. Although radium and x-ray treatment are often of benefit in inoperable cases, their use as a substitute for resection, when the latter is feasible, is to be severely condemned. The patient is being misled by false hopes, and valuable time is being lost.

6. In a series of 303 cases of rectal cancer, reported by Shedden[20] and me from the Collis P. Huntington Memorial Hospital, only 21 were found to be still living, and all had had radical operations. These were the survivors of only 63 cases which were operated upon. The series covered 16 years and most of the cases were advanced types. Of the remaining 240 cases, treated by x-ray, radium, colostomy, or untreated, all were dead.

Enough time has now elapsed for the accumulation of valuable statistics by the men who have pioneered in the modern extensive resections, and thus, we have available the figures of Miles, Jones, and Mummery, together with those compiled by Gabriel and others from cases not all their own. These statistics I will not go into in detail here except to mention in a general way the differences in methods of these men, and their end results.

Miles[21] uses only his own one-stage operation, and operates on about 33% of cases seen. By 1923 he had reduced his operative mortality to 9.4% in 53 cases where spinal anesthesia with supplementary gas-oxygen was used. In the previous 63 cases, using chloroform or ether, the mortality had been 36.2%. Miles reports 71% of 5 year cures.

Jones[22] operates on about 65% of cases seen, feeling that some cases beyond the 33% of Miles can be cured, and the others made much more comfortable and their lives prolonged. He uses any one of 5 different procedures, including his own, according to the needs of the individual case. His figures show a mortality, for all radicals, of only 12.5% in private cases, but 33% in hospital ward cases, an average of 22.7%. He has obtained, in his one- and two-stage abdominoperineal resections, 70% of cases living

and well after 3 years and 50% after 5 years. His 5 year cures in the favorable group are about 72%.

Lockhart-Mummery[23], using only colostomy and perineal excision, reported 3% mortality in his private and 14% in his charity cases. He obtained 54.8% 5 year cures. This figure, in the more favorable cases, rose to 73.7%, about the same as those of Miles and Jones.

Gabriel[24], on the other hand, reporting on a series of St. Marks Hospital cases, 521 in 14 years, found that 44% were operable. The 5 year cure rate was 24%. Of the 230 operated, 143 were done by colostomy and posterior excision, with a mortality of 15.4%. These cases, it should be stated, were done by different surgeons, and many were undoubtedly fairly advanced.

This brief historical review demonstrates the progress which has been made in the surgery of a disease which, prior to about 1884 showed 100% of recurrence, and until 1906 was cured only in rare instances.

TABLE I

AUTHOR'S CASES

Ser. No.	Sex	Age	Type of Operation*	Pathology	Died in Hosp.†	Died Later	Alive with Recurrence	Alive—No Evid. of Disease
1	F	69	Prelim. cecostomy Resec. with end-to-end anas.	Adenocarcinoma II		1 yr. 4 mos.–recurrence		
2	F	46	Abdominoperineal—2 stage	Malig. adenoma I		2 yr. 1 mo.–recurrence		
3	M	61	Colostomy & post. resection	Carc. simplex (colloid) III		7 mos.–recurrence		
4	M	48	Abdominoperineal—2 stage	Adenocarcinoma II			3½ years	
5	M	63	Abdominoperineal—2 stage	Adenocarcinoma III		4 mos.–pneumonia		
6	M	56	Abdominoperineal—2 stage	Adenocarcinoma (not graded)		2 yrs. 10 mos.-recurrence		
7	M	42	Abdominoperineal—2 stage	Adenocarcinoma II		7 mos.–recurrence liver		
8	F	56	Abdominoperineal—2 stage	Adenocarcinoma II				1½ years
9	F	36	Abdominoperineal—2 stage	Adenocarcinoma III				1½ years
10	M	56	Abdominoperineal—2 stage	Adenocarcinoma II				1½ years
11	M	70	Hartmann operation	Adenocarcinoma III	24 hrs.–pulm. coll. & pneu.			
12	F	44	Abdominoperineal—1 stage	Adenocarcinoma II				1 year 3 mos.
13	M	67	Abdominoperineal—2 stage	Epiderm. carc. II			1 year	
14	F	66	Abdominoperineal—1 stage	Adenocarcinoma III	7th day—pneumonia			
15	M	44	Abdominoperineal—1 stage	Adenocarcinoma III				6 months
16	M	25	Preliminary cecostomy Abdominoperineal—1 stage	Adenocarcinoma III			6 months	
17	F	47	Abdominoperineal—1 stage	Adenocarcinoma III				2 months
18	F	39	Abdominoperineal—1 stage	Adenocarcinoma II				6 weeks

*The two-stage operations were all done by the method of D. F. Jones.

†*Note*—Length of time after operation is referred to in last four columns.

ANALYSIS OF EIGHTEEN RESECTIONS

I am greatly indebted to Dr. D. F. Jones whose enthusiasm and skill in the surgery of rectal cancer stimulated my interest while resi-

dent surgeon on his service at the Massachusetts General Hospital ten years ago. Adherence to his sound principles has served to keep me fairly clear of trouble in dealing with these cases. A year ago, while in London, I had the privilege of spending several weeks with Mr. Ernest Miles who very kindly went out of his way to show me all of his cases in hospitals at the time, and to discuss his principles of treatment. In watching him operate I was much impressed with his facility, thoroughness, and speed in performing this operation, which, even in the most favorable subjects, is not an easy procedure. I am convinced that his operation, which is a single stage procedure, is anatomically the ideal method for removal of cancer of the rectum. I do feel, however, that a two-stage operation is safer in the older, less vigorous, and stout patients; and the Jones operation has been very satisfactory except for one or two minor points.

TABLE II

CONDENSED STATISTICS ON AUTHOR'S CASES

Type of Operation	Pathology	Age	Major Complications
Abdominoperineal 1 stage — 6	Epidermoid grade 2 — 1	25 years— 1	Preoperative obstruction —2
Abdominoperineal 2 stage — 9	Adeno grade 1 — 1	30–40 — 2	Postoperative obstruction —2
Colostomy—posterior resection— 1	Adeno grade 2 — 7	40–50 — 6	Perforation with small abscess (preoperative) —1
Resection with anastomosis — 1	Adeno grade 3 — 7	50–60 — 3	
Hartmann operation — 1	Adeno (not graded) — 1 Carc. simplex—colloid — 1	60–70 — 5 70 years— 1	Anal fistula Urethral fistula — 1
Total—18	Total—18	Total—18	Postoperative pneumonia —2
Operative mortality — 2 (9%)			
Cause—both pneumonia			

The eighteen cases which I am reporting here were, with two exceptions, fairly advanced in the disease when seen, and yet they were operable cases. Not all are favorable for long term cure, yet the survivors took on a new lease of life after their operation, and those now dead enjoyed a period of comfort until recurrence became quite advanced, and then died more quickly and with less terminal discomfort than would have been the case had the primary tumor not been removed. The cases illustrate a number of points of interest which seemed to me worthy of presentation.

OPERATIVE MORTALITY

Of the 18 cases, 2 died in the hospital, and both were autopsied. The first (Case 11), a man of 70, died the day following operation. I saw him the preceding evening and considered him in fair condition. During the night he became worse rather rapidly, and postmortem showed pulmonary atelectasis, bronchopneumonia, arteriosclerosis and streptococcus septicemia. He stood his operation so well that a transfusion was not considered necessary at the time. In retrospect I feel that it might have given him just enough added resistance to have warded off the infection. The other patient, a woman of 66 (Case 14), came through the operation with moderate shock, was transfused before leaving the operating room, and rallied beautifully that afternoon. The next day she showed a clear cut massive collapse of one lung, but her temperature dropped the second day and we felt she was progressing satisfactorily. On the fourth day her T.P.R. rose again, she showed signs of pneumonia, went downhill steadily, and died on the ninth day after operation. Autopsy confirmed bronchopneumonia as the cause of death. These two patients were among the three oldest in years in the series, for which reason, alone, perhaps a two-stage operation might have made a difference in their ability to resist the pulmonary infection. On the other hand both were anatomically favorable, and their condition seemed at the time to justify a single-stage procedure.

VALUE OF EARLY DIAGNOSIS AND PROMPT ACTION

Case 10, after 5 months of rectal bleeding, consulted his doctor who was familiar with rectal pathology. Internal hemorrhoids were obvious, but in addition the doctor palpated the raised, hard border of a carcinoma. The growth was then 5 x 6 cm. in diameter, located 4.5 cm. above the anus, was movable on the deeper tissues, and presumably had as yet not extended through the outer coat of the rectum. Abdominoperineal resection in two stages was prompt-

ly carried out. I removed for separate examination a lymph node at the point of ligation of the inferior mesenteric vessels, the highest point in the abdominal dissection. This node showed no evidence of cancer, nor was there any evidence of metastasis in any of several pararectal nodes examined from the main specimen. These latter nodes, however, were somewhat enlarged, as would be expected from the secondary infection in the carcinomatous ulcer near by. The measurements of the growth, as given above, were made by the pathologist. The tumor was not completely annular, about one-half the circumference of the bowel being involved.

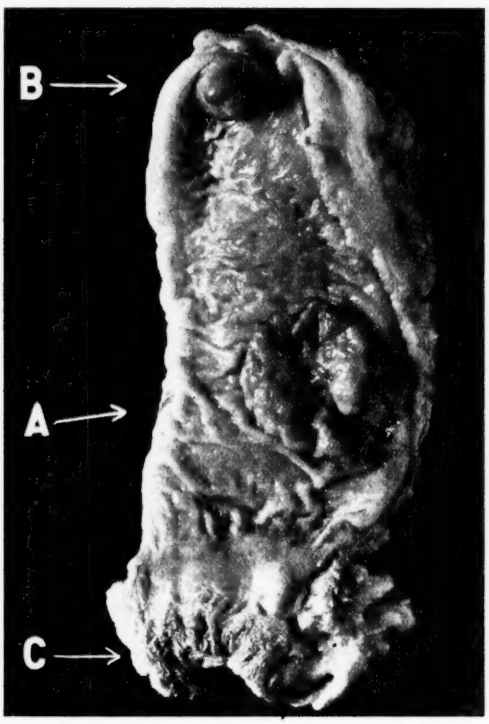

FIG. 1. Specimen removed in Case 12—outlook favorable.
A. The growth, 5 cm. in diameter and as yet not through outer coats of rectum.
B. Upper sigmoidal end closed by inversion prior to removal.
C. Anal canal.

Case 12, a personal friend of the preceding man, on hearing a month or so later, Case 10's account of his symptoms prior to operation, realized that she herself was having similar ones. She promptly consulted the same doctor who immediately discovered a growth almost identical in size with the one in Case 10, but a little higher, 11 cm. above the anus. No time was lost in arranging for operation, the only delay being that incident to securing a report on a specimen which I removed from the growth for pathological confirmation. An abdominoperineal resection in one stage was carried out. Here again the pararectal nodes were slightly enlarged but *none* showed cancer. The growth was 5 cm. in diameter. Sections showed only superficial invasion of the muscular coats of the bowel. This specimen is shown in Figure 1, and, as can readily be seen, the growth has involved exactly half the circumference of the rectum.

These 2 cases are probably the most favorable ones in the series for permanent cure. Both were of medium malignancy, adenocarcinoma grade II, both were operated fairly early, and in each one no evidence of metastasis could be detected either during the operation or in the pathological laboratory. If all rectal cancers could be diagnosed even as early as these, and preferably much earlier, the number of cures by radical operation would be very high. Diagnosis is easily made by the trained forefinger, supplemented by proctoscopic examination, while a specimen for pathological examination, easily and safely removed through the proctoscope, serves to make the diagnosis doubly sure.

OBSTRUCTION — PREOPERATIVE

Two cases (Nos. 1 and 16) were obstructed to some extent, due to telescoping, and a preliminary cecostomy was performed in each. This, of course, relieved the situation and permitted irrigation of the colon above the growth. Though theoretically one should be able to clean the bowel efficiently in this way, practically it is often quite difficult to wash out hard feces impacted in the descending colon just above the growth. Thus it was that in Case 16, even after two weeks of this procedure, the distal colon was still well filled when resection of the rectum and sigmoid was done. A slight degree of obstruction may be relieved by enemas, stupes, divided doses of milk of magnesia, and mineral oil, thus avoiding cecostomy. However, one must use care in selecting these two groups of cases. It is most important that any obstruction should be relieved and the patient allowed time to gain strength through food and rest before the main operation is undertaken.

OBSTRUCTION — POSTOPERATIVE

This occurred in two cases (Nos. 12 and 13). In each, the colostomy failed to function during the several days immediately after it was opened, gradual distention came on with its attendant discomfort, enemas in the colostomy stoma produced no results, stupes and pituitrin were ineffective, and nausea with regurgitation was beginning to develop. Under local novocaine the abdomen was entered in the right lower quadrant, and a distended loop of ileum presenting was utilized for the installation of a soft rubber catheter by the Witzel method. With the subsequent deflation of the small gut and drainage of its fluid contents into a bottle, the distention went down, and in 3 or 4 days the colostomy began to function. After four or five days more, during which time the colostomy had given evidence that it was going to continue to function, the catheter was withdrawn from the

abdomen and the ileostomy closed spontaneously. Wherever the obstruction was, it had been relieved by the release of distention. An actual search for the point or points of obstruction, which would be a formidable procedure following so closely the original severe operation, is almost never necessary. Such a search should never be carried out unless ileostomy as described above fails to effect a release of the obstruction. In each of the two cases herein cited, no recurrence of obstructive symptoms has developed even in slight degree.

FISTULA — ANAL AND URETHRAL

Case No. 15, when first seen in the office, presented a draining perianal sinus, not unlike an ordinary external fistulous opening. Palpation, however, disclosed stony induration beneath the skin, and the index finger encountered the lower border of a growth just above the anal canal. In Figures 2, 3, and 4 may be seen the relation

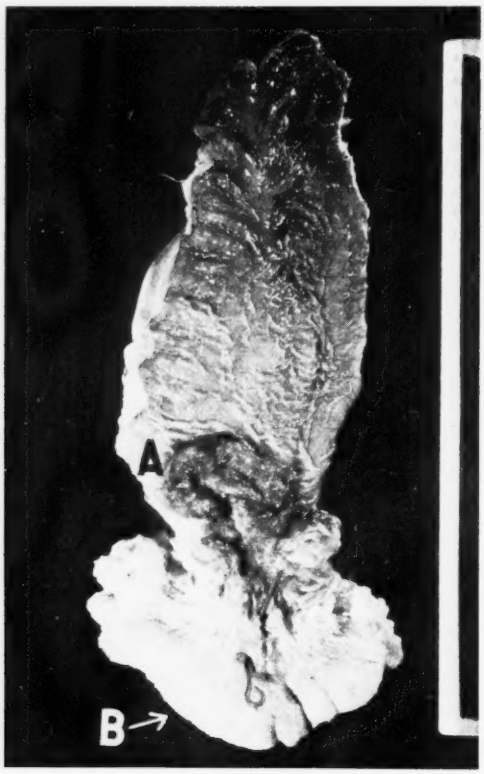

FIG. 2. (Case 15.) Low growth with secondary perirectal infection and complete fistula.
A. Growth.
B. Probe in fistula.

of the fistula to the growth and also the large amount of skin removed in order to circumvent the malignant invasion. With extension of an adenocarcinoma in this way to the perianal skin there is produced the same problem as exists in the epidermoid tumors—the possibility of inguinal gland metastasis. The tissues of the anal canal external to the pectinate line, together with the perianal skin, drain their lymph to

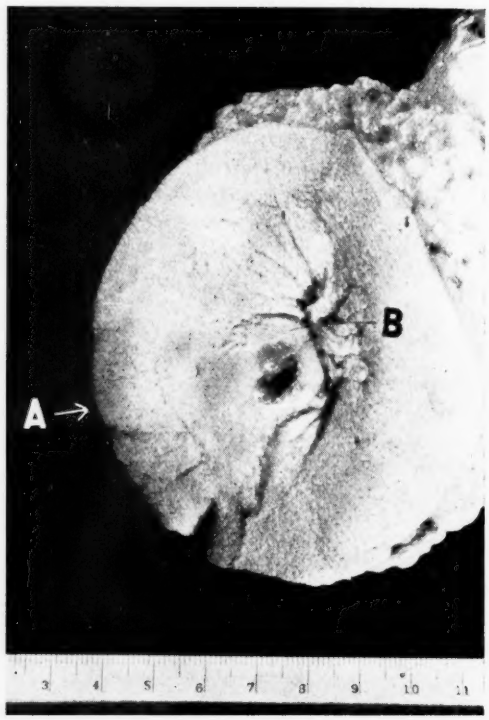

FIG. 3. (Case 15.) Perianal skin invaded by the growth.
A. External opening of fistula.
B. Anal outlet.

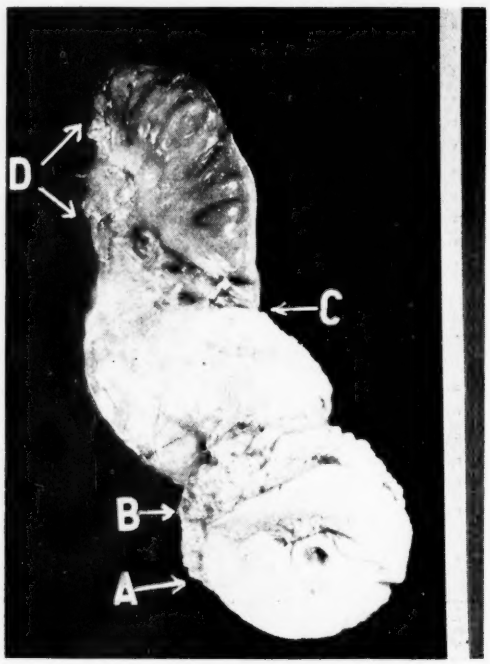

FIG. 4. (Case 15.) Specimen showing extent of removal.
A. External opening of fistula in skin.
B. Ischiorectal fat and levators.
C. Peritoneal reflexion.
D. Pelvic mesocolon and colon.

the upper inguinal glands, whereas the rectum above this line drains to the pararectal nodes and thence upward to the iliacs. Thus one is faced with the question, as in carcinoma of the vulva, penis, and scrotum, whether to dissect both groins. In this particular case the groins

were not dissected because the one-stage abdominoperineal resection was as much as the man could stand, and with a Type III, highly malignant, completely annular tumor the operation, as done, was considered to be largely palliative. In this man, also, there developed a urinary fistula from the membranous urethra into the perineal wound. (Fig. 5.) At operation

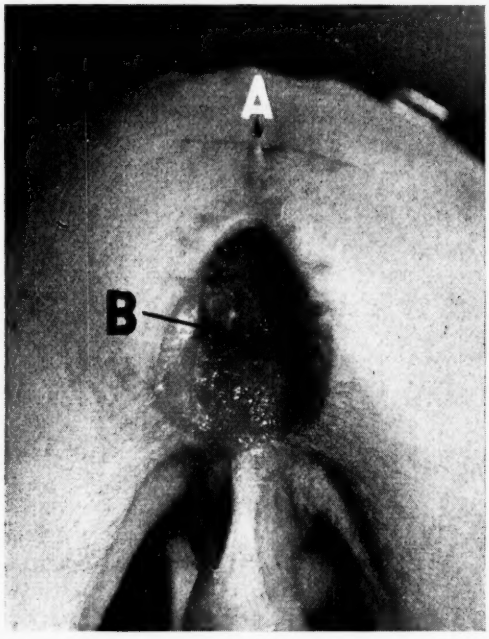

FIG. 5. (Case 15.) Perineal incision 14 days after operation.
A. Transverse incision over sacrococcygeal articulation to give better exposure (as done by Miles).
B. Urethral fistula (postoperative complication).

there was no evidence of any injury to the urethra, which contained a catheter. It may have developed as a secondary necrosis around a catgut tie placed on a bleeder overlying a point where the dissection had been carried very close. The perineal sinus has now nearly closed. It illustrates the necessity of extreme care in this part of the dissection in the male.

TELESCOPING TUMORS OF THE SIGMOID

Three cases in this series presented tumors which at one examination could be easily felt with the index finger, whereas at another they had receded not only beyond reach of the finger but, in two instances, beyond reach of the proctoscope. Each of the three cases, though alike in the above respect, required a different operation. In Case 1, a thin little woman with long mesosigmoid, and a tumor which I had felt easily on rectal examination, it was possible without difficulty to resect the tumor with a good margin of bowel and mesentery, and perform an aseptic, basting-stitch, end-to-end anastomosis. This patient recovered temporarily but died after one year and eight months, of recurrence in the mesocolic glands, demonstrated by autopsy. I was able to pass a proctoscope through the anastomosis nine months after operation and could see no sign of recurrence in the gut wall.

Case 11 was dealt with by using the so-called "turn-out" operation described by Hartmann[25].

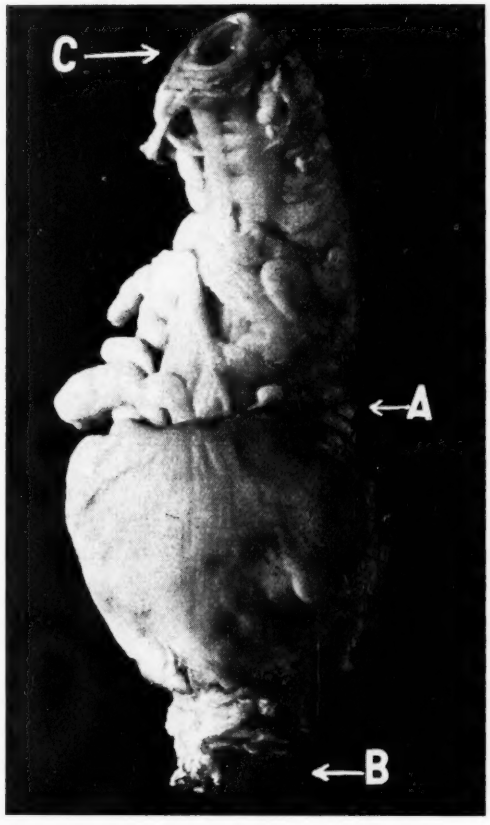

FIG. 6. (Case 11.) Carcinoma lower sigmoid telescoping into rectum.
A. Point of entry of intussuscepting growth.
B. Point of resection through normal rectum below growth.
C. Point of amputation at colostomy opening.

The rectal stump was infolded carefully, placed below the peritoneal floor, and the retroperitoneal space drained beside the coccyx. The proximal end, including the growth, was turned out, the growth resected, and a colostomy established. The rectal stump could have been removed later, together with perianal tissues, etc., or left in situ as desired. This operation is useful in removal of a growth partly above and partly below the peritoneal floor, too low for resection with establishment of continuity, yet permitting dissection below growth with removal of several inches of normal bowel. (See Figs. 6 and 7.)

In case 16 a one-stage abdominoperineal resection was done.

The possibility of a tumor well up in the sigmoid being palpable in the rectum by virtue of this intussuscepting mechanism, should always be borne in mind when making the examination. This circumstance, though not frequent, provides a chance of avoiding colostomy, and justifies mention of this possibility to the patient when advising operation in this type of growth.

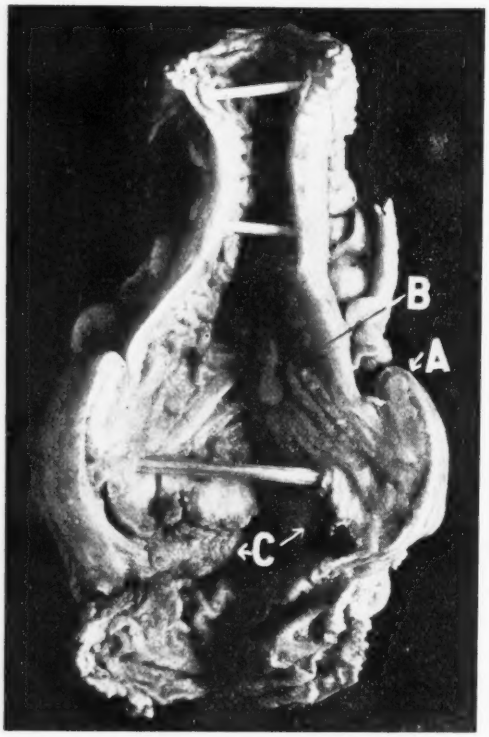

FIG. 7. (Case 11.) Same specimen opened up.
A. Intussusception visible.
B. Benign polyp.
C. Lower limit of growth.

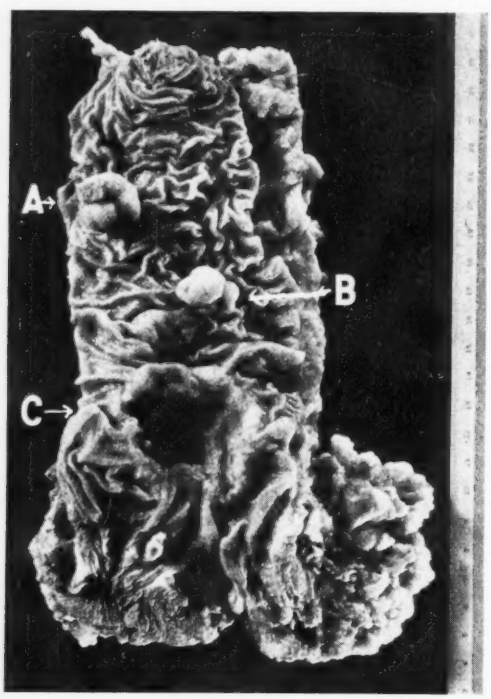

FIG. 8. (Case 14.) Deeply invading adenocarcinoma grade 3, with early malignant adenoma higher up.
A. Early malignancy in an adenoma.
B. Adenoma still benign.
C. Carcinoma.

COEXISTENT ADENOMATOUS POLYPS AND MULTIPLE PRIMARY CARCINOMAS

Four cases (Nos. 7, 11, 14 and 17) proved to have one or more polyps, in addition to the carcinoma, in the section of the bowel removed. In two of the four (Nos. 14 and 17) a polyp undergoing definite malignant changes was detected.

In the specimen of Case 14, Figure 8, can be clearly seen two large polyps above the carcinoma. Dr. Hartwell's report on the upper one is as follows: "Microscopic examination of the upper one of the pedunculated lesions shows an atypical structure. It consists of large, irregular gland tubules lined by atypical epithelium which is, for the most part, in single layers. Diagnosis—Malignant Adenoma." The main growth in this case was adenocarcinoma Grade III. It is interesting to note, in Figure 8, that, though the growth had not gone entirely around the circumference of the bowel, yet ulceration was deep, with extension through into pararectal tissues and lymphatics. A growth of lower malignancy might well have traveled the whole circumference before breaking through into the extra-rectal areas.

Case 17 also had a malignant polyp. No photograph is available but Dr. Bradley's report is as follows: "A specimen of rectum and sigmoid 30 cm. in length with an area of carcinoma 6 cm. in length whose lower border is 5.5 cm. from the anus. The tumor involves the serosa. There is a polyp 3 cm. in diameter located 6 cm. above the growth. The surface of the polyp over an extensive area, sharply demarcated at either end from well differentiated, normal appearing glands, shows rather marked atypical proliferation with fairly well formed glands and varying differentiative changes in the lining cells. The appearance is that of incipient malignant degeneration. The lymph nodes show no metastasis.

Diagnosis—

1. Adenomatous polyp with malignant degeneration.
2. Adenocarcinoma Grade II."

Case 15 is of interest as illustrating the fact that a malignant tumor can show different degrees of malignancy in different areas. Biopsy through a proctoscope before operation showed "Malignant adenoma", while the postoperative report was "Adenocarcinoma Grade III with extension to the pararectal tissues." The first specimen was taken from the free margin of the tumor, whereas the second was from the advancing border deep in the rectal wall. Thus it is evident that one cannot always deduce from biopsy the whole story. A benign polyp may show early malignancy at the base of its pedicle, an area which would not be taken in the average biopsy. This case adds another bit of evidence confirming the fact that benign adenomas may become malignant and then may change still further into a highly malignant adenocarcinoma.

THE VILLOUS ADENOMA — A PRECANCEROUS LESION

The villous type of adenoma is much less common than the simple adenoma. I have seen only five instances among a large number of cases of simple adenomas. The villous tumor grows to a considerable size, as illustrated in Figure 9. This case, though not in the series here reported, I am introducing to illustrate the structural differences between such a tumor and carcinoma. It will be observed that the growth has a band-like attachment to the wall of the rectum. The finger can be inserted each side of this linear fold of attachment and the tumor easily shifted back and forth. In this particular case it is also of great interest to know that after I had removed the tumor and pedicle through the anal outlet, a small area of carcinoma was demonstrated by the pathologist in the pedicle. Clinically there had been nothing to suggest it. Careful and frequent observation of the former site of the tumor has as yet (6 months) failed to reveal evidence of recurrence. Radical resection was thoroughly considered at the time but we felt that we were justified in waiting as the growth seemed to have been completely removed. This decision may seem open to question, for there is no doubt but that an immediate abdominoperineal resection would have been the best insurance against recurrence. The circumstances of this particular case, however, led me to decide against urging it.

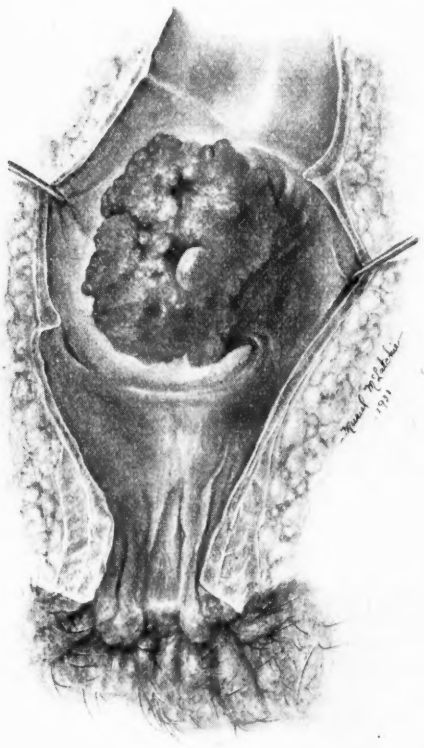

FIG. 9. Villous adenoma of mid-rectum which showed, after removal through anus, early carcinoma in pedicle. About 45 per cent of these become malignant.

QUESTIONABLE MALIGNANCY IN A STRICTURED RECTUM

One occasionally has the experience of passing a proctoscope through normal rectum up to a point where the calibre of the bowel narrows to about the size of a lead pencil, yet with no abnormal tissue visible below the stricture. Under these circumstances a biopsy is useless for only normal mucous membrane would be taken in the specimen.

Two cases during the past two years presented themselves with a complaint of passing blood by rectum and with symptoms of incomplete obstruction. Both had had previous radium treatment; the first, two years previously for carcinoma of the cervix, the second, nine months previously for carcinoma of rectosigmoid. Both looked in excellent health, and the proctoscopic picture was identical in each, the lower limit of stricture being in the sigmoid, and in each case blood could be seen coming from higher up.

In the first patient, who is not included in this series, there seemed to be three possibilities in diagnosis.

1. An implant in the bowel wall, metastatic from the cervix.
2. A primary scirrhous carcinoma of the sigmoid.
3. A postradiation stricture with ulceration.

I considered it unsafe to postpone operation and so advised the patient. She was operated upon by another surgeon who found a hard, narrowed area in the sigmoid which he was able to resect with an end-to-end anastomosis. The patient made a good recovery. Subsequent pathological examination revealed no malignancy but a strictured area several cm. in length, unquestionably due to the effect of the heavy cervix radiation.

The second patient is Case 8 in this series. She had had a colostomy performed 9 months previously at another hospital, at which time radium treatments had been given inside the rectum. Details of dosage were not obtainable, but I knew that the radium supply of that hospital was not large. The specimen shown in Figure 10 was removed by a two-stage abdominoperineal resection. The colostomy loop, fortunately, was well up in the descending colon, leaving ample bowel below to work with. At first the pathologist was unable to find cancer in the strictured area, but later did locate a small area of adenocarcinoma grade II. It is hard for me to believe that a carcinoma in this location and extending over several cm. of bowel could have been so adequately treated by the radium avail-

able at that hospital as to very nearly destroy all trace of the disease. A more likely explanation seems to me to be the following. The patient had worn a ring pessary for 20 years. The strictured area was typical of an inflammatory narrowing. I would therefore venture the suggestion that the malignancy was a rather recent development secondary to the chronic inflammatory process at the point of pressure of the pessary.

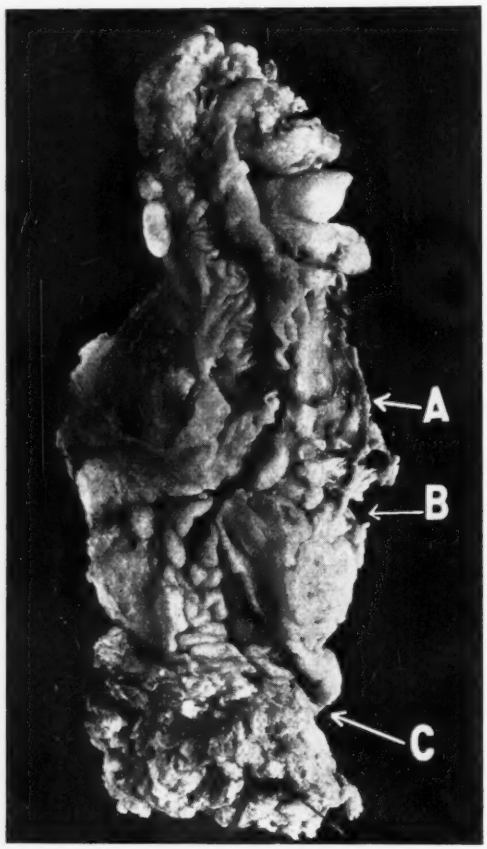

FIG. 10. (Case 8.) A stricture probably originally inflammatory but with subsequent malignant degeneration.
A. Upper limit stricture.
B. Lower limit stricture.
C. Anal canal.

IN CONCLUSION

1. It is now an established fact that an individual with cancer of the rectum, if operated upon reasonably early by one of several extensive procedures, and in the hands of a competent surgeon before, during, and after the operation, has an excellent chance of not only leaving the hospital but of being cured. This fact, though well known to those most closely concerned with this type of work, is doubted by a great many physicians because of their own experiences with rectal cancer. No man in general practice, even the busiest, sees many cases, for they do not appear with great frequency even in a large hospital. It is also a fact that a radical operation, applied to a patient who is farther advanced in the disease but still operable, will give him a chance of cure, and if he is not cured he will have a much happier, and a longer, duration of life than if treated in other ways.

2. A combined abdominoperineal resection in one stage with permanent colostomy, as described by Miles, is acknowledged by the surgeons with widest experience in this field to give the best chance of cure. A two-stage procedure, by one of several methods, but with the same degree of block dissection (see Fig. 11), is a necessary adjunct in keeping the mortality down to a reasonable figure and extending the scope of the operation to include the less favorable cases.

3. A brief review of the evolution of these operations has been presented, together with an analysis of 18 personal cases, some of which illustrate points of especial interest.

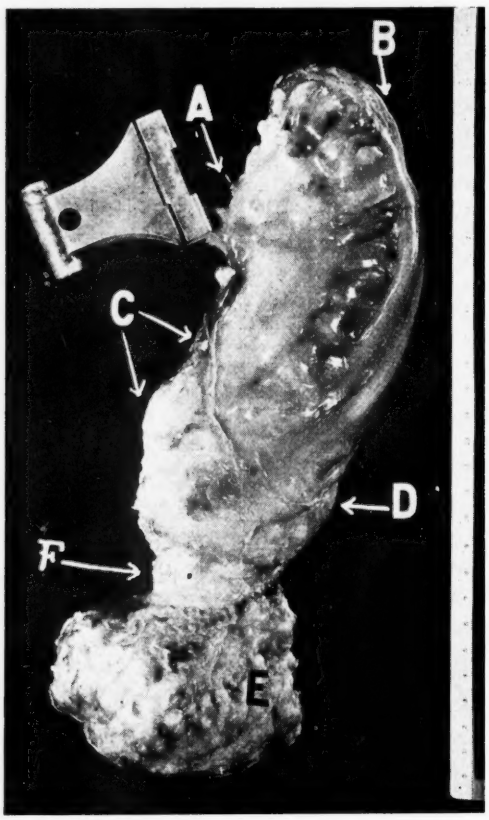

FIG. 11. Specimen removed by Miles' operation.
A. Pelvic mesocolon showing tie at point of ligation of superior hemorrhoidal vessels.
B. Long segment of lower descending colon and sigmoid, with peritoneum intact.
C. Retroperitoneal structures dissected from hollow of sacrum.
D. Peritoneal reflexion where bladder is dissected free.
E. Wide removal levators, fat, and skin.
F. Level of the growth.

REFERENCES

1 Lisfranc, Jacques: Cancer de l'extremite inferieure du rectum; ablation. Gaz. d. hôp. 1: 362, 1828.
2 Lisfranc, Jacques: Memoire sur l'excision de la partie inferieure du rectum, devenue carcinomateuse. Extrait du No. 37 de la Gaz. méd. de Paris. 1830.

3 Verneuil: Traitement palliatif du cancer du rectum au moyen de la rectotomie lineaire. Gaz. hebd. de méd. p. 196, Mar. 27, 1874.
4 Kocher, T.: Die exstirpatio recti nach vorheriger excision des steissbeins. Centralbl. f. Chir. 1: 145-147, 1874.
5 Cripps, W. Harrison: Three cases of excision of the rectum for cancer. Tr. Clin. Soc. London 17: 159-164, 1884.
6 Kraske, P.: Zur exstirpation hochsitzender mastdarmkrebse. Verhandl. d. deutsch. Gesellsch. f. Chir. 14: 464-474, 1885.
7 Mayo, C. H.: Cancer of the sigmoid and rectum. Surg. Gynec. Obst. 3: 236, 1906.
8 Miles, W. Ernest: A method of performing abdominoperineal excision for carcinoma of the rectum and of the terminal portion of the pelvic colon. Lancet 2: 1812, 1908.
9 Miles, W. Ernest: The radical abdomino-perineal operation for cancer of the rectum and of the pelvic colon. Brit. M. J. 2: 941, 1910.
10 Mayo, W. J.: Removal of the rectum for cancer. Ann. Surg. 51: 854, 1910.
11 Mayo, W. J.: The radical operation for the relief of cancer of the rectum and rectosigmoid. Ann. Surg. 56: 240, 1912.
12 Cripps, Harrison: Discussion on the surgical treatment of rectal cancer. Brit. M. J. 2: 843, 1912.
13 Coffey, R. C.: The major procedure first in the two-stage operation for relief of cancer of the rectum. Ann. Surg. 61: 446-450, 1915.
14 Coffey, R. C.: Principles of the operation for carcinoma of the rectum. Surg. Gynec. Obst. 38: 723-738, 1924.
15 Jones, D. F.: A two-stage combined abdominosacral operation for carcinoma of the rectum. J. A. M. A. 65: 757-764 (Aug. 28) 1915.
16 Lockhart-Mummery, P.: Resection of the rectum for cancer. Lancet 1: 20, 1920.
17 Lahey, Frank H.: Two-stage abdominoperineal removal of cancer of the rectum. Surg. Gynec. Obst. 51: 692-699, 1930.
18 Rankin, Fred W.: Two stage resection for carcinoma of the rectosigmoid and rectum. Surg. Gynec. Obst. 53: 670-675 (Nov.) 1931.
19 Bartlett, Willard, and Bartlett, Willard Jr.: A one-stage combined resection of the rectum. Arch. Surg. 22: 786 (May) 1931.
20 Hayden, E. Parker, and Shedden, William M.: Carcinoma of the rectum—a study of three hundred and three cases. Surg. Gynec. Obst. 51: 783-798, 1930.
21 Miles, W. Ernest: Cancer of the Rectum. London, Harrison and Sons, 1926.
22 Jones, D. F.: End results of radical operations for carcinoma of the rectum. Ann. Surg. 90: 675, 1929.
23 Lockhart-Mummery, J. P.: Two hundred cases of cancer of the rectum treated by perineal excision. Brit. J. Surg. 14: 110, 1926.
24 Gabriel, W. B.: The results of perineal excision in the treatment of carcinoma of the rectum. Analysis of 143 cases. Brit. J. Surg. 12: 466, 1925.
25 Hartmann, H.: Nouveau procede d'ablation des cancers de la partie terminale du colon pelvien. Cong. franc. de Chir. Proc. verb. Paris 30: 411, 1921.

PICTORIAL EXHIBIT OF THE NEW YORK CITY CANCER COMMITTEE

The New York City Cancer Committee has recently prepared an unusual type of historical exhibit, designed to show, through pictures, the great advances in the care of the sick since very early times, particularly with reference to cancer. If the public can be made to understand and appreciate what facilities are not available for the treatment of cancer, there should be less hesitation and delay in seeking help when necessary.

Of particular interest to us in New York is the fact, emphasized in the exhibit, that New York State has been a pioneer in the work of cancer control. In 1884 the first hospital devoted especially to cancer treatment was opened in New York City. This is the institution now known as the Memorial Hospital for the Treatment of Cancer and Allied Diseases.

Four years later (1888) there was opened at Buffalo, under a special grant from the Legislature, the research laboratory which has developed into the State Institute for Malignant Disease, the first state maintained cancer center to be established in the United States.

In 1924, the New York City Cancer Institute, the first municipal hospital for cancer in the United States, was opened for patients, and in 1927, a Division of Cancer was formed in the Department of Hospitals of the city, with control over this and all other municipal cancer activities.

In 1930, of the 17 special cancer hospitals in the United States with a total of 1,273 beds, 6, containing 613 beds, were in New York State. New York has reason to be proud of its record, even though its care of the cancer patient is still inadequate.

Photostatic copies of the charts composing the exhibit have been made through the generosity of the Prudential Insurance Company of America, and a limited number are available for loan to responsible organizations.

Requests may be sent to the American Society for the Control of Cancer, 25 West 43rd Street, New York, or to the New York City Cancer Committee, 34 East 75th Street, New York.

SUMMER COURSES FOR "SIGHT-SAVING" CLASSES

The steadily increasing number of "sight-saving" classes which are being established in public school systems throughout the country have opened many opportunities for advancement to teachers with the necessary special training, according to Mrs. Winifred Hathaway, Associate Director of the National Society for the Prevention of Blindness.

To prepare teachers and supervisors for this work with children having seriously defective vision, summer courses will be offered this year (1932) by four universities, in coöperation with the National Society for the Prevention of Blindness, as follows:

University of Cincinnati, Cincinnati, Ohio, June 18-July 26.

University College, University of Chicago, Chicago, Ill., June 27-August 5.

Teachers College, Columbia University, New York, July 5-August 12.

State Teachers College, Buffalo, New York, July 5-August 12.

Information concerning these courses may be secured from the respective universities or from the National Society for the Prevention of Blindness, 450 Seventh Avenue, New York City.

EFFORTS TOWARD NARCOTIC CONTROL

The United States Government is developing progress toward the control of narcotics in that the production and importation of narcotic drugs will be restricted under new treaties among the nations. The strict limitation of production is more effective than any other method of control.

The Massachusetts Medical Society

PROGRAM OF THE ONE HUNDRED AND FIFTY-FIRST ANNIVERSARY

THE Exercises of the Anniversary will be held on Wednesday, Thursday, and Friday, June 8, 9 and 10 in the Hotel Statler, Boston.

WALTER L. BURRAGE, *Secretary.*
May 8, 1932.

STANDING COMMITTEES

Of Arrangements

T. H. Lanman, F. H. Colby, G. P. Reynolds, W. M. Shedden, W. R. Morrison.

On Publications

Homer Gage, J. W. Bartol, R. I. Lee, R. B. Osgood, E. W. Taylor.

On Membership and Finance

D. N. Blakely, Gilman Osgood, G. C. Caner, J. E. Fish, H. F. Newton.

On Ethics and Discipline

David Cheever, W. D. Ruston, S. F. McKeen, A. C. Smith, R. L. DeNormandie.

On Medical Education and Medical Diplomas

P. P. Johnson, H. P. Stevens, C. H. Lawrence, C. A. Sparrow, E. S. Calderwood.

On State and National Legislation

H. G. Stetson, T. J. O'Brien, F. E. Jones, A. W. Marsh, Shields Warren.

On Public Health

Dwight O'Hara, E. F. Cody, F. G. Curtis, G. N. Hoeffel, G. D. Henderson.

On Malpractice Defense

F. G. Balch, E. D. Gardner, F. B. Sweet, R. P. Watkins, A. W. Allen.

DELEGATES AND ALTERNATES TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

Delegates

J. M. Birnie, Springfield; C. E. Mongan, Somerville; J. F. Burnham, Lawrence; W. H. Robey, Boston; E. F. Cody, New Bedford; R. I. Lee, Boston.

Alternates

W. C. Leary, Springfield; L. S. McKittrick, Boston; E. L. Hunt, Worcester; Cadis Phipps, Brookline; P. E. Truesdale, Fall River; C. H. Lawrence, Jr., Boston.

GENERAL INFORMATION

A Bureau of Information will be maintained at the Registration Desk on the mezzanine floor of the Hotel Statler, close to the commercial exhibit space in the Ball Room Assembly. There will be a private telephone at the bureau for the reception of calls for attending physicians. Physicians expecting to receive calls should leave their names and destinations with the attendant.

Fellows are requested to register as soon as they arrive and to get their tickets for the Annual Dinner and for the Friday luncheon. The charge for the Annual Dinner will be $3.00 to those who are not in arrears and the Friday luncheon will be without charge to those whose dues have been paid.

Exhibits. The entire Ball Room Assembly of the hotel will be used for the commercial exhibits. All of the space has been engaged. (Several prospective exhibitors could not be accommodated.) There is promise of an unusually fine showing.

RULING

Under the terms of the By-Laws a copy of this program is mailed by the Secretary to every Fellow of the Society one month before the annual meeting. The program will be republished in more extended form in the official organ of the Society, the weekly *New England Journal of Medicine,* issue of May 12, 1932, and reprints will be made for distribution at the hotel during the meeting.

WEDNESDAY MORNING, JUNE 8,
9 O'CLOCK TO NOON
Boston City Hospital

Medical and Surgical Clinics at the Boston City Hospital, 818 Harrison Avenue, South End. (Full details of the clinics will appear in a later issue of the *Journal.*) Following the clinics a luncheon will be served to the attending Fellows in the dining room of the new House Officers Quarters, by courtesy of the Trustees of the hospital.

WEDNESDAY MORNING, JUNE 8, 11:30 O'CLOCK
Hotel Statler, Ball Room

ANNUAL MEETING OF THE SUPERVISING CENSORS

WEDNESDAY NOON, JUNE 8, 12 O'CLOCK
Hotel Statler, Ball Room

Annual Meeting of the Council followed by the Cotting Luncheon. (Should the Council meeting be prolonged the Georgian Room may be used in the afternoon for an adjourned meeting.)

(Notices, with the order of business, will be mailed to Councilors on June first.)

WEDNESDAY AFTERNOON, JUNE 8,
2:30 TO 5 O'CLOCK
Hotel Statler, Ball Room

Talking Motion Pictures. Commercial and Scientific Exhibits

2:00-2:30—Mechanism of the Heart Beat and Electrocardiography. (From the Lahey Clinic. Developed by Dr. Lewis M. Hurxthal.)

2:35-3:15—Repair of Urethrocele, Cystocele and Lacerations of the Cervix. (Developed by the Petrolagar Laboratories. No. 19 in their series.)

3:20-3:55—Repair of Second and Third Degree Lacerations of the Perineum and Rectocele. (Developed by the Petrolagar Laboratories. No. 20 in their series.) The two Petrolagar films were developed by Dr. H. O. Jones, Associate Professor of Gynecology at Northwestern University Medical School

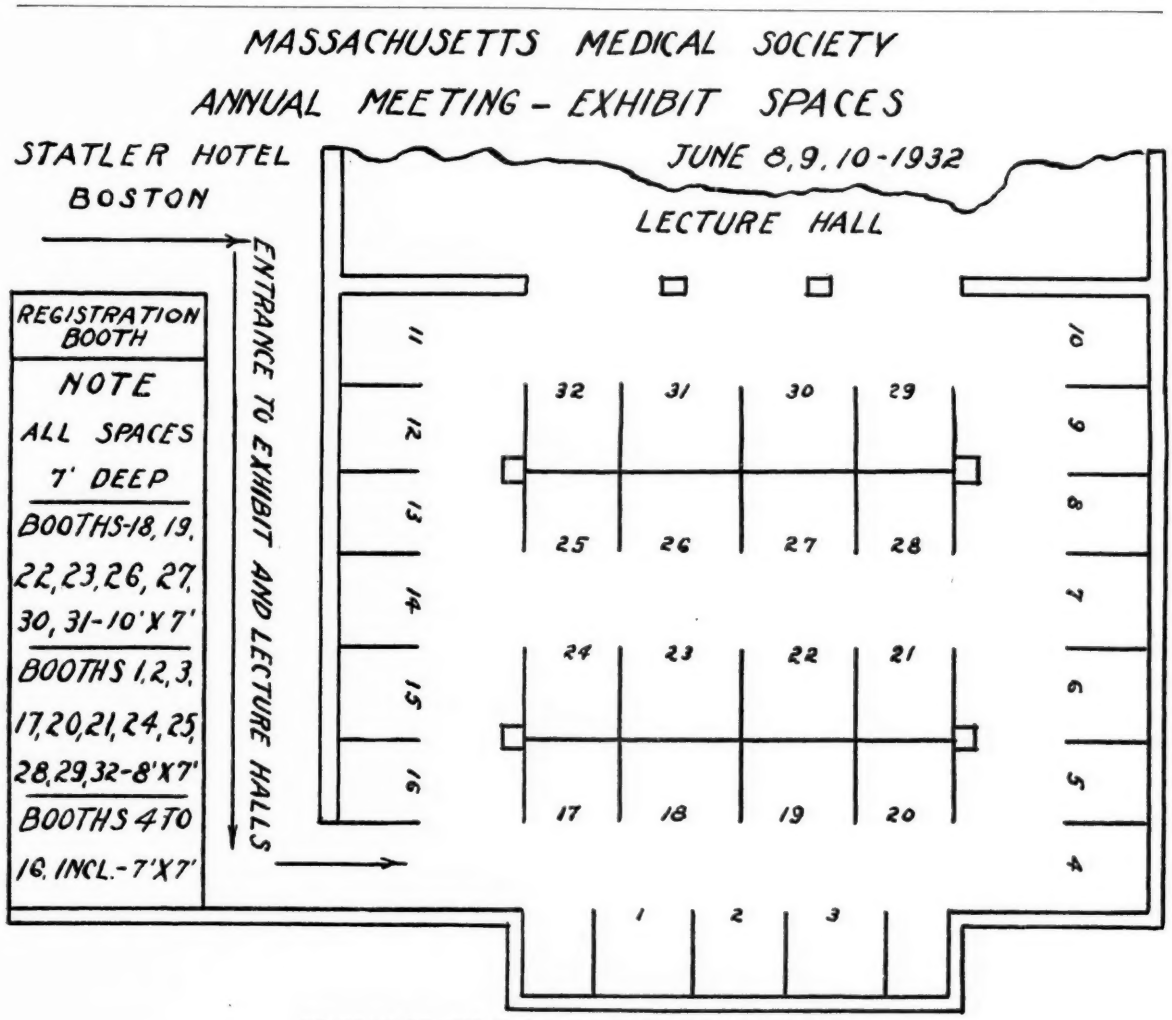
MASSACHUSETTS MEDICAL SOCIETY
ANNUAL MEETING - EXHIBIT SPACES
STATLER HOTEL
BOSTON
JUNE 8, 9, 10 - 1932
LECTURE HALL
ENTRANCE TO EXHIBIT AND LECTURE HALLS
REGISTRATION BOOTH
NOTE
ALL SPACES 7' DEEP
BOOTHS 18, 19, 22, 23, 26, 27, 30, 31 - 10' X 7'
BOOTHS 1, 2, 3, 17, 20, 21, 24, 25, 28, 29, 32 - 8' X 7'
BOOTHS 4 TO 16 INCL. - 7' X 7'
11 12 13 14 15 16
32 31 30 29
25 26 27 28
24 23 22 21
17 18 19 20
10 9 8 7 6 5 4
1 2 3

DIAGRAM OF THE HALL IN WHICH THE COMMERCIAL EXHIBITS WILL BE SHOWN.

and head of the Gynecological Service at St. Luke's Hospital, Chicago.

4:00-4:30—Acute Appendicitis. (Developed by the Eastman Teaching Films, Inc.)

COMMERCIAL EXHIBITS, HOTEL STATLER

(*See Diagram, Page 993*)

Booth No.

1—Mellin's Food Company of North America, 177 State St., Boston, Mass.
2—Davies, Rose & Co., Ltd., 22 Thayer St., Boston, Mass.
3—General Foods Corporation, Postum Building, 250 Park Ave., New York.
4—The Medical Protective Company, 360 North Michigan Blvd., Chicago, Illinois.
5—The DeVilbiss Company, Toledo, Ohio.
6—George H. Crosbie and Clarence T. Macdonald, 79 Milk St., Boston, Mass.
7—Bilhuber-Knoll Corp., 154 Ogden Ave., Jersey City, N. J.
8—Association of Certified Milk Producers of Metropolitan Boston, 66 Commonwealth Ave., Boston, Mass.
9—Association of Certified Milk Producers of Metropolitan Boston, 66 Commonwealth Ave., Boston, Mass.
10—Kalak Water Company of New York Incorporated, 6 Church St., New York City.
11—E. F. Mahady Company, 851-857 Boylston St., Boston, Mass.
12—E. F. Mahady Company, 851-857 Boylston St., Boston, Mass.
13—Medical Case History Bureau, 11 West 42nd St., New York.
14—The E. L. Patch Company, Stoneham, Mass.
15—General Electric X-Ray Corporation, 2012 Jackson Blvd., Chicago, Illinois.
16—Tailby-Nason Company, 49 Amherst St., Cambridge, Mass.
17—Warren E. Collins, Inc., 555 Huntington Ave., Boston, Mass.
18—Charles W. Broadbent Company, 665 Huntington Ave., Boston, Mass.
19—E. R. Squibb & Sons, 745 Fifth Ave., New York.
20—Lederle Laboratories Inc., New York.
21—Mead Johnson & Company, Evansville, Indiana.
22—The Chas. H. Phillips Chemical Co., 170 Varick St., New York.
23—R. B. Davis Company, Hoboken, N. J.
24—Petrolagar Laboratories Incorporated, 8134 McCormick Blvd., Chicago, Illinois.
25—Gerber Products Division, Fremont Canning Co., Fremont, Michigan.
26—Kellogg's, Battle Creek, Michigan.
27—Picker X-Ray Corporation, 300 Fourth Ave., New York.
28—Picker X-Ray Corporation, 300 Fourth Ave., New York.
29—New England X-Ray Corporation, 30 Huntington Ave., Boston, Mass.
30—Horlick's Malted Milk Corporation, Racine, Wisconsin.
31—Merck & Co. Inc., Rahway, N. J.
32—Merck & Co. Inc., Rahway, N. J.
33—Campbell X-Ray Co. of Boston, 100 Sudbury St., Boston.

Booth 33 does not appear on the diagram. It is located at the entrance to Exhibit and Lecture Halls.

WEDNESDAY EVENING, 8:30 O'CLOCK

Hotel Statler, Ball Room

THE SHATTUCK LECTURE

By Dr. Frank B. Mallory, Professor of Pathology, Harvard Medical School.

Subject: *Cirrhosis of the Liver.*

DR. MALLORY is one of the leading authorities in pathology in this country. His treatment of the subject of Cirrhosis of the Liver will reflect long-continued study of this disease.

Light refreshments after the lecture.

THURSDAY MORNING, JUNE 9, 9 O'CLOCK

Hotel Statler, Ball Room

SECTION OF MEDICINE

Officers of the Section

Dr. Hervey L. Smith, Springfield, *Chairman.*
Dr. Ralph W. Ellis, Worcester, *Secretary.*

1. *A Study of Lobar Pneumonia in Massachusetts. Preliminary Report.*
   By Dr. Roderick Heffron, Boston. (By invitation.)
   Discussion to be opened by Dr. Frederick T. Lord, Boston, Dr. Edwin A. Locke, Boston, and by Dr. W. D. Sutliff, Boston. (By invitation.)
2. *Twenty Years of Syphilis Under Salvarsan.*
   By Dr. C. Morton Smith, Boston, Dermatologist and Syphilologist.
   Discussion to be opened by Dr. William P. Boardman, Boston, and Dr. George A. Dix, Worcester.
3. *The Interpretation of Syndromes Associated with Arterial Hypertension.*
   By Dr. Soma Weiss, Boston, Internist.
   Discussion to be opened by Dr. Channing Frothingham, Boston, and Dr. Robert S. Palmer, Boston.

4. *Some Factors in the Prognosis of Heart Disease.*
   By Dr. Samuel A. Levine, Boston Internist.
   Discussion to be opened by Dr. George M. Albee, Worcester, and Dr. Burton E. Hamilton, Boston.

THURSDAY MORNING, JUNE 9, 9 O'CLOCK

Hotel Statler, Georgian Room

SECTION OF RADIOLOGY AND PHYSIOTHERAPY

Officers of the Section

Dr. Ralph D. Leonard, Melrose, *Chairman.*
Dr. Edward H. Trowbridge, Worcester, *Secretary.*

1. *Primary Carcinoma of the Lung. Diagnosis and Treatment with the X-Ray.*
   By Dr. P. F. Butler, Boston, Roentgenologist.
   Discussion to be opened by Dr. Horace Binney, Boston, Surgeon.
2. *Roentgenologic Study of Gall-Bladder Diseases.*
   By Dr. George Levene, Norwood, Boston, Radiologist.
   Discussion to be opened by Dr. Lester R. Whitaker, Boston, Surgeon.
3. *Physical Therapy, An Aid To Routine Medical and Surgical Practice.*
   By Dr. Frank H. Krusen, Philadelphia, Pa., Specialist in Tuberculosis, Temple University School of Medicine. (By invitation.)
   Discussion to be opened by Dr. William D. McFee, Haverhill, Boston, Roentgenologist.
4. *Treatment of Growths by Electro-Surgery.*
   By Dr. George A. Wyeth, New York, N. Y. (By invitation.)
   Discussion to be opened by Dr. Edward H. Trowbridge, Worcester.
5. *Colonic Irrigation.*
   By Dr. Harold K. Marshall, East Gardner. Gardner State Colony. (By invitation.)

THURSDAY NOON, 12:30 O'CLOCK

Hotel Statler, Ball Room

THE ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY

Business of the Annual Meeting

Proposed amendment to Chapter VII, of the By-Laws that was accepted by the Council, February 3, 1932:

Add a new section as follows:

Chapter VII, Section 9. The Committee on Permanent Home shall consist of seven fellows. It shall act for the society in all matters pertaining to the financial and mechanical arrangements (of a temporary or permanent nature) necessary to secure and maintain adequate accommodations for the officers, employees, and departments of the society, subject to the approval of the council.

It shall devise and execute plans for the raising of funds to be added to those which have been or may be acquired for the purpose of providing temporary or permanent accommodations for the society.

All bills incurred shall be countersigned by the chairman and forwarded to the president for his approval.

The committee shall make a report of its doings to the council, including the condition of the fund for a home for the society, at the annual meeting of the council.

THURSDAY AFTERNOON, 2 O'CLOCK

Hotel Statler, Ball Room

SECTION OF OBSTETRICS AND GYNECOLOGY

Officers of the Section

Dr. Frederick J. Lynch, Boston, *Chairman.*
Dr. Frank A. Pemberton, Boston, *Secretary.*

1. *Elective Version, with Lantern Slide Demonstration.*
   By Dr. Irving W. Potter, Buffalo, N. Y., Obstetrician. (By invitation.)
   Discussion to be opened by Dr. Charles J. Kickham, Boston, Gynecologist.
2. *Report of Committee on a Survey of the Incidence of Puerperal Septicemia in Massachusetts.*
   By Dr. Charles E. Mongan, Somerville, *Chairman.*
3. *Routine Prophylactic Injection of Whole Blood in the New Born. A Report of 800 Cases.*
   By Dr. Roy J. Heffernan, Boston, Gynecologist.
   Discussion to be opened by Dr. John E. Talbot, Worcester, Obstetrician.
4. *How can the State Department of Public Health aid in the Program of this Section to improve the Practice of Obstetrics?*
   By Dr. George H. Bigelow, Massachusetts Commissioner of Public Health.

THURSDAY AFTERNOON, JUNE 9, 2 O'CLOCK

Hotel Statler, Georgian Room

SECTION OF TUBERCULOSIS

Officers of the Section

Dr. Sumner H. Remick, Waltham, *Chairman.*
Dr. Roy Morgan, Westfield, *Secretary.*

1. *Silicosis in Vermont Granite Cutters and Slate Workers.*
   By Dr. Edward J. Rogers, Pittsford, Vermont. Chairman Vermont State Department of Health. (By invitation.)
   Discussion to be opened by Dr. Charles Whelan, Boston.
2. *Pneumothorax Treatment in Pulmonary Tuberculosis.*
   By Dr. Andrew Peters, Waltham. Middlesex County Tuberculosis Hospital.
   Discussion to be opened by Dr. Paul Dufault, Rutland. Rutland State Sanatorium.
3. *Thoracoplasty in Pulmonary Tuberculosis.*
   By Dr. Wyman Whittemore, Boston, Surgeon.
   Discussion to be opened by Dr. Walter Gray Phippen, Salem, Surgeon.

THURSDAY EVENING, JUNE 9, 7 O'CLOCK

THE ANNUAL DINNER

Fellows wishing to sit together at the dinner will please send their names to Dr. Thomas H. Lanman, Chairman of the Committee of Arrangements, 264 Beacon Street, Boston, at the earliest date possible, and proper reservations will be made. Tickets should be obtained at the Registration Desk.

FRIDAY MORNING, JUNE 10, 8:45 O'CLOCK

Hotel Statler, Ball Room

SECTION OF SURGERY

Officers of the Section

Dr. Richard H. Miller, Boston, *Chairman.*
Dr. Allen G. Rice, Springfield, *Secretary.*

1. *The Question of the Chronic Appendix.*
   By Dr. Royal P. Watkins, Worcester, Surgeon.
   Discussion to be opened by Dr. Ralph W. French, Fall River, Surgeon, and Dr. Chester M. Jones, Boston, Internist.
2. *The Medical Aspects of Appendicitis.*
   By. Dr. George L. Steele, Springfield, Internist.
   Discussion to be opened by Dr. Reginald Fitz, Boston, Internist, and Dr. George A. Moore, Brockton, Surgeon.
3. *Factors Reducing Mortality in Acute Appendicitis.*
   By Dr. Howard M. Clute, Boston, Surgeon.
   Discussion to be opened by Dr. Peer P. Johnson, Beverly, Surgeon, and Dr. Thomas R. Donovan, Fitchburg, Surgeon.
4. *Mortality of Acute Appendicitis.*
   By Dr. George P. Muller, Philadelphia, Pa., Professor of Clinical Surgery in the University of Pennsylvania School of Medicine. (By invitation.)
   Discussion to be opened by Dr. Irving J. Walker, Boston, Surgeon, and Dr. John Homans, Boston, Surgeon.

FRIDAY MORNING, JUNE 10, 8:45 O'CLOCK

Hotel Statler, Georgian Room

SECTION OF PEDIATRICS

Officers of the Section

Dr. Edwin T. Wyman, Boston, *Chairman.*
Dr. Joseph Garland, Boston, *Secretary.*

1. *Erythroblastosis of the Newly Born. Diagnosis and Treatment.*
   By Dr. Stewart H. Clifford, Boston, Pediatrist.
   Discussion to be opened by Dr. Frederick C. Irving, Boston, Obstetrician.
2. *The American Academy of Pediatrics; Its Purpose and Scope.*
   By Dr. John Lovett Morse, Boston, President of the American Academy of Pediatrics.
3. *Program of the State Committee of the American Academy of Pediatrics.*
   By Dr. Harold C. Stuart, Boston, Pediatrist.
   Discussion to be opened by Dr. Warren R. Sisson, Boston, Pediatrist.
4. *Can Fulminating Tracheo-bronchitis be Cured?*
   By Dr. Lyman G. Richards, Boston, Oto-Laryngologist, Pediatrist.
   Discussion to be opened by Dr. D. Campbell Smyth, Boston, Oto-Laryngologist.

FRIDAY NOON, 12:30 O'CLOCK

Hotel Statler, Ball Room

THE ANNUAL DISCOURSE

By Dr. Samuel B. Woodward, Worcester.

Subject: *The Story of Smallpox in Massachusetts.*

DR. WOODWARD filled the office of President of the Society in the years 1916-1919 and for seventeen successive years has advocated advanced legislation for the prevention of smallpox. Although Massachusetts has a fairly effective law relating to vaccination, if Dr. Woodward's teachings are ever adopted throughout the country the United States will become the leading nation in the reduction of the incidence of smallpox.

At the close of the annual discourse a luncheon will be served in the Ball Room to those who have obtained tickets. This will end the Annual Meeting.

MEETINGS OF THE COUNCIL

The Annual Meeting, Wednesday, June 8, 1932, at 12 noon, in the Ball Room, Hotel Statler. Other stated meetings in John Ware Hall, Boston Medical Library, at noon, on the first Wednesdays of October and February.

CENSORS' MEETINGS

The Censors for the several districts will meet for the examination of applicants for fellowship on the first Thursdays of May and November.

The Censors for the Suffolk District will examine applicants residing in that district and also applicants who are non-residents of Massachusetts.

Applicants for fellowship should apply to the Secretary of the District Society of the district in which they reside (have a legal residence) at least one week before the date of a given examination, taking with them their diplomas.

TREASURER'S NOTICE

Assessments should be paid to District Treasurers, or, in the case of Non-Residents, to the Treasurer.

Assessments were due January 1st. For the convenience of Fellows who have not yet paid, such assessments will be received for the Treasurer at the Registration Desk on the mezzanine floor of the hotel.

1931—1932

OFFICERS OF THE SOCIETY

Halbert G. Stetson, *President*—39 Federal Street, Greenfield.
Thomas H. McCarthy, *Vice-President*—142 Main Street, Brockton.
Walter L. Burrage, *Secretary*—182 Walnut Street, Brookline.
Charles S. Butler, *Treasurer*—257 Newbury Street, Boston.

T. H. Lanman, *Chairman Committee of Arrangements*—264 Beacon Street, Boston.

SECRETARY'S NOTICE

All communications as to membership, especially changes of residence and address, should be sent to the Secretary, who keeps a constantly corrected official list of the Fellows and their addresses.

Fellows are requested to see that their names are entered correctly in the Annual Directory.

THE JOURNAL

The *New England Journal of Medicine*, the official weekly organ of the Society, will be sent only to Fellows who have paid their assessments, and to such Honorary and Retired Fellows as may apply for it. Address communications to the Managing Editor of the *Journal*, Dr. W. P. Bowers, 8 The Fenway, Boston.

Society Headquarters, 8 The Fenway, Boston.

MEETING OF THE HARVARD MEDICAL SCHOOL ALUMNI ASSOCIATION

The annual meeting of the Harvard Medical School Alumni Association will be held in the Salle Modern in the Hotel Statler, June 9, in connection with the usual luncheon at one o'clock.

Since this meeting is scheduled at the same time and place as that of the Massachusetts Medical Society, it may be of convenience to the members of the Association who wish to attend certain sessions of the Medical Society.

HEMOPHILIA: THE ANAPHYLACTIC TREATMENT OF ACUTE EMERGENCIES BY PASSIVE SENSITIZATION*

Report of a Case

BY R. CANNON ELEY, M.D.†

IN 1920, Vines[1] made the clinical observation that if an allergic reaction were produced by the intradermal injection of an antigen, to which a patient suffering from hemophilia had previously been sensitized, there would be a reduction in the coagulation time of the blood and a consequent diminution in the tendency of the patient to bleed. Several years later Mills[2] confirmed these clinical observations and after a careful study concluded that the alteration in the coagulation time which occurred following the allergic reaction was due to the formation of a normally reactive prothrombin. Eley and Clifford[3] while treating a group of children by this method demonstrated that the reduction in the coagulation time of the blood occurred only in the blood as obtained by puncture of the skin, i.e., capillary blood, and that there was no alteration in the coagulation time when the blood was obtained by venipuncture. Marlow[4], in demonstrating the negative effect of the administration of liver in hemophilia, confirmed the observations of Eley and Clifford.

The treatment of hemophilia by anaphylaxis presupposes that the patient has already been rendered sensitive to a specific antigen. However, as it requires from 8 to 10 days following the injection of the antigen to produce a state of sensitization, this procedure is of no value in the treatment of an acute emergency arising in a patient who has not previously been sensitized. Fortunately such occurrences are not common, as the majority of patients suffering from hemophilia have usually received horse serum in an attempt to control some previous hemorrhage. Yet such cases do occur and it is in this group that passive sensitization by transfusion is of great value.

In 1926 Mills was treating a patient who was in a very critical condition following a severe hemorrhage, and as there was no local reaction to an intradermal injection of horse serum it was concluded that treatment by anaphylaxis could not be employed. Two transfusions were given without either clinical improvement or alteration in the coagulation time of the blood, so a third donor was obtained and the patient again transfused. Immediately following this transfusion an erythema appeared at the site of the previously intradermally injected horse serum and a few minutes later it developed into a typical wheal. Coincident with the development of the wheal the hemorrhage began to subside and there was a reduction in the coagulation time of the blood. This suggested that a state of allergy had been transmitted to the patient by the transfusion. In confirmation of this, an intradermal injection of horse serum then given to the donor, was followed by wheal formation.

The following case is reported to confirm the observations of Mills, and to demonstrate the value of passive sensitization in the treatment of acute emergencies developing in patients suffering from hemophilia who have not previously been rendered sensitive to horse serum or to some other antigen.

CASE REPORT

W. M., a white male patient, was admitted to the hospital in a very critical condition as a result of continuous bleeding from an ulceration on the gingival mucous membrane. The family history showed that there were several members who had hemophilia. The patient was also known to suffer from this disease and on several occasions had had such severe hemorrhages following minor lacerations that repeated transfusions had been necessary. Physical examination showed an acutely ill patient with marked pallor of all the mucous membranes and moderately severe air-hunger. On the gingival mucous membrane just below the left third molar was a small ulceration from which there was a continuous oozing of blood. The extravasated blood had extended into the loose tissues of the face to such an extent that the normal configuration was distorted. The hemorrhage had also extended into the subcutaneous tissues of the neck and over the entire anterior chest wall from the clavicles to the costal margin. Examination of the blood showed: Hgb. 35 per cent., red blood cells 1,000,000, white blood cells 15,000, platelets normal, bleeding time 3 minutes, and coagulation time (capillary blood) 3 hours and 30 minutes. An intradermal injection of 0.1 c.c. of horse serum was not followed by wheal formation. As the patient was in a critical condition it was decided to give him a transfusion, using a donor sensitive to horse serum. At the completion of the transfusion a faint pink color appeared at the site of the previously intradermally injected horse serum and 20 minutes later there appeared a typical wheal. Coincident with the appearance of the wheal, there was a reduction in the coagulation time of the capillary blood and further bleeding from the ulceration did not occur. One-half hour following the transfusion the coagulation time had been reduced from 3 hours and 30 minutes to 45 minutes, 12 hours afterwards, to 16 minutes, and at the end of 48 hours it had further been reduced to 12 minutes where it remained for the following 10-12 days. At this time, i.e., 14 days after the intradermal injection of the horse serum, the coagulation time again became prolonged but quickly returned to 12 minutes following a second intradermal injection. These injections have been repeated at 14-day intervals in order to maintain the allergic state and the resultant reduction in the coagulation time.

Six months have elapsed since the discharge of the

*From the Infants' and Children's Hospitals and the Department of Pediatrics of the Harvard Medical School, Boston.

†Eley—Assistant in Pediatrics and Communicable Diseases, Children's Hospital. For record and address of author see "This Week's Issue," page 1013.

patient from the hospital and throughout this period he has been entirely free from hemorrhage, although on several occasions he has received lacerations that formerly would have resulted in profuse bleeding.

REFERENCES

1 Vines, H. W. C.: Anaphylaxis in the treatment of haemophilia. Quart. J. Med. 13: 257-276, 1920.

2 Mills, C. A.: Blood clotting studies in hemophilia. Am. J. Physiol. 76: 632-641, 1926.

3 Eley, R. C., and Clifford, H. S.: Hemophilia: treatment by protein sensitization. Am. J. Dis. Child. (in press).

4 Marlow, A.: The negative effect of the administration of liver in hemophilia. Bull. Johns Hopkins Hosp. 49: 49-54, 1931.

5 Mills, C. A., and Schiff, L.: Passive anaphylaxis in a hemophiliac. Am. J. M. Sc. 171: 854 (June) 1926.

CAN VITAL STATISTICS BE USED TO MEASURE THE QUALITY OF MATERNITY CARE?*

BY JAMES RAGLAN MILLER, M.D.†

IN recent times serious effort has been expended on improving maternity service in all its branches. Those who are particularly interested have been spurred to considerable activity because vital statistic reports as at present compiled apparently show that this country has a very poor quality of obstetric care available for its parturient women. There is, however, no commonly accepted method of bookkeeping by which the results of these various programs can be evaluated.

Vital statistics furnished by our public health authorities are being used frequently in this connection, often without an understanding of their many inaccuracies. Even such an able statistician as Louis I. Dublin, Ph.D. with Hazel Corbin in reporting a study of the records of the Maternity Center Association of New York makes the following statement[1]: "The maternity mortality rate based on live births was 2.4 per 1000 which may be compared with the rate of 5.3 maternal deaths among white women in New York City." The Visiting Nurse Association of Detroit compares its low maternal mortality rate with the higher rate for the city of Detroit[2]. These are but two examples of inaccurate uses of statistics. I do not wish to minimize the excellent work done by these and similar organizations for I believe that their program has in fact reduced the maternal mortality among their clientele but comparisons cannot be made in such an easy going manner for two reasons. First, the average city mortality rate includes deaths from abortions and recent work has shown that in large cities abortions cause nearly 20 per cent of all puerperal deaths.[3, 4] Secondly, the patients who are in the care of these associations are to some extent a selected group, for women who expect to have a difficult delivery will seek out specialists and be delivered in the hospitals rather than remain at home. For these same reasons we cannot compare urban and rural death rates, nor rates for physicians with those for midwives, if one uses the statistics which are available at present.

The thesis which I wish to present is that vital statistics of puerperal and neonatal mortality and of stillbirths now available are not in a form nor of a quality to be of much use as a measure of the quality of obstetric and prenatal care. I wish, therefore, to propose a more restricted classification in this field which I believe will produce vital statistics which can more accurately be used as a gauge of the maternity program. Specifically I would suggest: (1) Vital statistics covering deaths of mothers should include all women dying from "puerperal causes" as defined by the Census Bureau, whose terms of pregnancy have reached at least the twenty-eighth week. (I would put no time limit after delivery.) (2) Stillbirths should be enumerated in which the fetus has developed at least to the twenty-eighth week. (3) Neonatal mortality should be reckoned on the babies which die during the first week of life in whom development has proceeded to at least the twenty-eighth week.

There are many reasons why our present vital statistics are unreliable. In the first place the methods of classification used in different countries and states vary markedly. Many examples of this are familiar to those who have worked in this field. Our medical students are not taught the technique or the importance of accurate certification. In many states the town clerk, a layman, is the vital statistician by law and his interest and training cannot be relied upon to supervise certification.

During a study of puerperal mortality in Hartford from 1909-1928 which I reported to the Connecticut State Medical Society[5], I became aware of the many inaccuracies which creep into vital statistics at the source. Three hundred and five puerperal deaths were recorded. Careful analysis of case histories and interviews with physicians furnished data upon which a reclassification was made in conjunction with the vital statistician of the city who had originally tabulated the mortality records. It was found that in 204 instances the classification of the cause of death had been incorrectly made usually due to lack of correct data. It is true that the general figures were changed very little by this reclassification, but many of the subdivisions in the puerperal group showed very different values and I obtained a firm conviction that any

*Thesis for membership in the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

†Miller—Assistant Obstetrician and Gynecologist, Hartford Hospital. For record and address of author see "This Week's Issue," page 1013.

vital statistics of puerperal mortality which are not closely checked are of little use.

Over the period of 20 years in Hartford I was able to show that there had been a definite improvement in the mortality rate for mothers, contrary to the official figures, if we considered only those pregnancies which had passed beyond the twenty-eighth week. This improvement was shown for all causes and for sepsis and toxemia in particular. It is also after the twenty-eighth week that one can look for results of good or bad obstetric care. The physician has little control over the early months and if we wish to use mortality rates as a check on the quality of maternity care I believe we can afford to disregard the deaths prior to the twenty-eighth week for the sake of obtaining more significant figures. In the nature of things deaths during the last three months occur more often in hospitals and under circumstances where truthful reporting is to be expected. Conversely the earlier in pregnancy, the less significant and reliable are the statistics.

There may be some discussion as to the exact period of pregnancy where the line should be drawn but reason would seem to dictate that the period of viability is one which is easily understood by physician and layman alike and that its adoption would greatly simplify the regulations.

When we turn to stillbirth statistics we find utter confusion. One can obtain a clear idea of this confusion by reading a recent article entitled "What is a Stillbirth?" by Dr. Eugene Gagnon, statistician of the city of Montreal.[6] He discusses the general principles and definitions bearing on life, birth and abortion, the medico-legal side of the question and various religious aspects involved, reviewing the situation in Canada, the United States and several other countries. He pointedly remarks, "What is important to know in the case of a stillbirth is not the cause of death but why the child was born dead." It is therefore necessary to have a special stillbirth certificate so arranged as to give information concerning the parental influence on the fetus. I believe that the profession will coöperate by furnishing answers to the few simple questions necessary if the national and state authorities will ask the questions and tabulate the answers. Dr. Gagnon shows that in states where stillbirths are reportable as early as the fourth month, namely in California and Vermont, the rates of 2.9 and 2.7 are found. These are among the lowest rates of all of the states whereas we should expect that they should be among the highest. Apparently regulations in this regard are not enforceable as they do not appeal to the reason of physicians and laymen.

It is not even necessary to have a common statutory definition of a stillbirth though this would help. Uniform statistics can be obtained if the period of gestation in weeks were noted on the certificate.

In July 1927 the state of Connecticut adopted the present statutory definition of a stillbirth. It followed the suggestion of the League of Nations' Health Committee by defining a stillbirth as the birth of a dead fetus which had reached at least the twenty-eighth week or which measures at least 13.8″ (35 cm.). It is interesting to observe the effect of this law in Hartford. Our stillbirth rate for five years prior to 1927 averaged 4 per 1000 live births. In 1927 it dropped to 3.4, in 1928-9 to 2.8 and in 1930 was 2.9. A careful study of the stillbirths during 1930 shows that this law is not yet fully understood by our physicians and our health department. Nine out of 108 stillbirths were clearly under 28 weeks and our stillbirth rate should have been 2.4 for 1930.

An effort has been made to put into practice in Connecticut the basic ideas expressed in this paper. In 1930 the Public Health Council of Connecticut which governs the procedures and activities of the State Department of Health considered the two following resolutions which were submitted by the Connecticut State Medical Society.

"Whereas the Census Bureau records do not distinguish between viable and non-viable pregnancies with respect to maternal mortality, especially with reference to deaths from septicemia and albuminuria; and

"Whereas, such failure to so differentiate conceals statistically any improvement in obstetrical practice because of improvement in death certification; therefore be it

"Resolved, that the Connecticut State Department of Health be importuned to classify separately those pregnancies which have passed the twenty-eighth week; to issue the necessary regulations to require this specific date from those signing death certificates; and to take any other measures necessary to increase the accuracy and value of puerperal statistics in this state."

The following vote was taken by the Public Health Council on this resolution:

> "Voted: That the Connecticut State Department of Health classify maternal deaths as far as practicable in accordance with the resolution received from the Connecticut State Medical Society."

The second resolution reads as follows:

"Resolved, that the Connecticut State Medical Society requests the Commissioner of the State Department of Health to consult with the proper authorities and urge the addition of one or more blank lines for this purpose."

The following vote was taken by the Public Health Council:

> "Voted: That at least one more line will be placed on the death certificate for cause of death, at the time of the next printing, in accordance with request expressed in a resolution of the State Medical Society."

The State Department of Health has circularized the physicians explaining in detail the regulations and during the next few years we may expect that these rates will probably become quite reliable. It will be necessary, however, for the Bureau of Vital Statistics of the State Department of Health to check all records since the Town Clerks are not equipped to do so.

During 1930 there occurred in Hartford 132 deaths of infants during the first week of life (residents and non-residents), 19 of these had not reached the twenty-eighth week of pregnancy. Under the law any fetus which moves, has a heart beat or breathes is supposed to be reported as a live birth but many instances of failure to do so are known to occur. It is, I believe, quite unusual to report as a live birth a fetus which is miscarried at the fourth or fifth month in which movements are observed for a few minutes. One must remember that a live birth usually entails the expenses of an undertaker and the family physician can save the family this expense by conveniently failing to observe evidence of life. It does not seem common sense to him to report a live birth in such a case. If therefore we are to use these records as a measure of maternity care we must have a lower limit which is easily understood and commonly accepted, and I believe that the period of viability is the most logical point at which to draw the line.

The neonatal period has been variously defined in the recent literature. I believe from our study in Hartford that the first week of life is the logical period to study if we wish to gain the most dependable figures which are significant in studying our prenatal and delivery work. Eighty-five and five-tenths per cent of the deaths in the first month occurred in the first week of life during 1930. This is about the usual percentage. During the second to fourth week the effects of good or bad postnatal care began to assume a more important rôle. We can therefore afford to disregard all deaths occurring after the first week in the interest of obtaining more significant data.

Current literature is full of instances of misused statistics. Authors apparently fail to realize that rates are merely fractions expressed in the decimal system and as such there are both numerators and denominators. Both parts of the fraction must accurately represent a complete or well-defined enumeration. The second mistake most commonly made in comparing rates is a failure to get a common denominator. Rates are compared when various factors involved are truly not comparable. The third mistake, perhaps the most common one, is to attach significance to small groups of cases. Changes in rates must be of considerable size and extend over considerable time to become significant unless the series studied is very great. No one should use vital statistics without competent advice.

In conclusion I wish to say that these studies made in Hartford on a city-wide basis in the field of maternity care, with correction of the certification covering puerperal, neonatal and stillbirth mortality, have driven me to the conclusions formulated as the thesis of this paper, namely:—

1. Vital statistics as compiled by the public health authorities, cannot be used as a measure of the quality of maternity care.

2. The period of viability (twenty-eighth week) can be used as the lower limit in enumerating puerperal, neonatal deaths and stillbirths and one week of life as the neonatal period, thereby obtaining figures which can be used as a gauge of maternity care.

GENERAL STATISTICS HARTFORD 1930
POPULATION 164,072

Total Live and Stillbirths		
Resident and non-resident		4406
Non-resident		1232
Residents only		3174
Live Births		
Resident and non-resident		4299
Non-resident		1204
Residents only		3095
Stillbirths		
Resident and non-resident (Board of Health 108)		99
Non-resident (Board of Health 28)		24
Residents only (Board of Health 80)		75
Birth rate	19.3 per 1000 population	
Stillbirth rate (Board of Health 2.84)	2.42 per 1000 total births	
Puerperal mortality (Board of Health)	4.3 per 1000 live births	
Delivered by midwives, 99 mothers, no maternal deaths (2 infant deaths)		
Death rate children under one year per 1000 live births		62.88
Death rate white children under one year per 1000 live births		57.28
Death rate colored children under one year per 1000 live births		143.64
Deaths under one month, rate per 1000 live births	34.2 Total	151
Deaths under one month, rate per 1000 live births	33.0 Residents	102
Deaths under one week, rate per 1000 live births	30.8 Total	132
Deaths under one week, rate per 1000 live births	28.7 Residents	88

WARD SERVICES OF THE HOSPITALS

Hospital	Babies	Mothers	Registered in Prenatal Clinic	Per Cent Registered
Hartford	701	680	337	49.5
St. Francis	601	590	352	59.0
Mt. Sinai	58	55	30	54.5
Municipal	123	121	56*	46.0
Total	1483	1446	775	53.4

*Prenatal clinic service for Municipal Hospital given at the Hartford Dispensary (independent). It is estimated that at least 50 per cent of the privately delivered cases had a minimum of five prenatal visits.

Thirty-six per cent of all live and stillborn babies were delivered on ward services.

Fifty-three and four-tenths per cent of all ward cases were registered in a prenatal clinic. About 25 per cent of the ward cases had at least five prenatal visits in the last three months.

Eighty-three and five-tenths per cent of the total live and stillbirths were delivered in a hospital.

Seventy-eight and five-tenths per cent of the resident mothers were delivered in a hospital.

Seventy-six per cent of the neonatal deaths and 74 per cent of the stillbirths in residents occurred in hospitals. One per cent of the resident neonatals and 5 per cent of the resident stillbirths occurred out of town.

Thirty-three per cent of the neonatals and 24 per cent of the stillbirths were non-residents.

Twenty-eight per cent of all live and stillbirths were non-residents.

Day of death (Neonatals)	1	2	3	4	5	6	7
Total number residents and non-residents	95	20	7	3	3	2	0
Percentage	72	15	5.3	2.3	2.3	1.5	0

No difference was noted between residents and non-residents.

No significant differences were noted in the rates for the white native—white foreign and black, except for the increased illegitimacy rate among the black.

The colored population of Hartford is 6605. One hundred and ninety-six live births are recorded of which 13 were non-residents and 7 stillbirths of which 2 were non-residents.

Thirty per cent of all neonatal death certificates were signed by general practitioners, 24 per cent by pediatricians, 31 per cent by obstetricians and 4.6 per cent by coroner's physicians.

These figures showed considerable difference between resident and non-resident mothers and babies attended by specialists. (Figures given in percentage.)

	Neonatal		Stillbirths	
	Res.	Non-Res.	Res.	Non-Res.
General practitioners	39	16	40	21
Pediatricians	20	33	40	5
Obstetricians	35	49	37	45
Coroners' physicians	5.5	2.3	5.9	29
Interns	0	0	17	0

Interns in Connecticut may sign birth and stillbirth certificates but not death certificates.

Only nine autopsies were done among 131 neonatal and 99 stillbirths. If vital statistics as applied to any one cause of death or group of allied causes are to be made truly reliable, so that the individual certificates represent the true state of affairs, we must divide all deaths into three classes. First, those where the cause of death has been proved by autopsy, blood culture or other certain objective observations. Secondly, those deaths where the physician has observed the progress of the case long enough to be reasonably sure of the cause. The third class should contain those causes which are purely guesswork.

Until some method is devised to bring about this sorting of wheat from chaff, the medical profession will continue to have lack of interest in and a profound distrust of the statistics furnished by governmental agencies and by some insurance companies.

Causes of death showed no significant differences between residents and non-residents. Grouped together and recorded in percentages they are given as corrected by my investigation as follows:

Cause of Death	Neonatal	Stillbirth
Prematurity	38	2
Syphilis	.8	3
Respiratory	5.3	0
Diseases of the blood	1.5	0
Congenital malformation	10.6	14
Obstetric trauma	24	17
Toxemia	4.6	7
Others	10*	56†

*2 due to infanticide, 3 placenta previa, 2 premature separation, 10 cause unknown.

†13 macerated among 26 "unknown causes", of which Wassermann reaction was negative eight times. Twice the other twin lived; of the 13 macerated cases only one had a microscopic examination of the placenta. Five caused by placenta previa, and seven by premature separation, of which only one mother was toxic. Thirteen stillbirths were due to prolapsed cord or cord about the neck, one to bronchopneumonia in the mother and three to accidents to the mother.

The following tables show the neonatal deaths and stillbirths in groups according to age and parity of the mother. In parentheses after each group is the percentage of all mothers who were in the group.

Mother's Age		Neonatal Deaths	Stillbirths
Up to 19	(7.2%)	11	4
20 to 29	(55.7%)	47	32
30 to 39	(33.5%)	29	34
40 to 49	(3.3%)	1	5

Number of Children		Neonatal Deaths	Stillbirths
1	(34.2%)	37	28
2, 3 and 4	(48.5%)	41	23
5 and more	(17.6%)	9	24
Unknown		1	0

Four and five-tenths per cent of the resident neonatal deaths were illegitimate.

One per cent of the stillbirths were illegitimate.

Who delivered the babies that died (in percentages):

Delivered by	Neonatal		Stillbirths	
	Res.	Non-Res.	Res.	Non-Res.
Midwife	3.5	0	0	0
General practitioner	33	14	28	1
Intern	20	19	25	37.5
Obstetrician*	39	65	37	58
Unattended	4.5	1	4	0
Unknown	0	0	6	0

*As "obstetrician" I have classed those physicians who hold active staff appointments in obstetrics or whose training and experience back up a reasonable claim as specialist.

One sees that the specialist again has the largest proportion of out-of-town cases. One might also be inclined to deduce that the best-trained and most experienced men get the worst results were it not known that they get the most difficult cases to handle either in their own practice or as consultants called in by interns and general practitioners to carry the responsibility and often to try to make the best of a bad situation.

The degree of development of the fetus is shown as follows (again in percentages):

	Neonatals		Stillbirths	
	Res.	Non-Res.	Res.	Non-Res.
28-30 weeks	40	21	28	8
33-38 weeks	16	26	16	21
Term	26	44	51	71
Overdue (10 lbs.)	1.1	0	6	0
Under 28 weeks	17	10	0	0

The rates for ward and private cases varied a little from the proportion for ward and private live and stillborn for the city (38 per cent ward, 62 per cent private):

	Neonatals		Stillbirths	
	Res.	Non-Res.	Res.	Non-Res.
Ward	27	35	31	50
Private	73	65	69	50

No figures are available for the proportion of residents and non-residents who used the ward services, but probably the residents were slightly more numerous.

Amount of Prenatal care is shown as follows (in percentages):

	Neonatals		Stillbirths	
	Res.	Non-Res.	Res.	Non-Res.
Adequate (5 visits)	37	37	36	33
Less than 5 visits	23	23	23	25
None	35	37	37	28
Not stated	5.7	2.3	4	12

There is perhaps an indication that "adequate" prenatal care in itself is by no means going to eliminate completely the loss of babies.

The effect of prenatal clinic care is suggested in the following table. The percentages shown in brackets, represent the proportion of all maternity cases delivered in the city which were registered in the clinic of the hospital, e.g., St. Francis Hospital cared for 7.95 per cent of all Hartford maternity cases and reported only 1 per cent of all Hartford stillbirths. There is clearly suggested a beneficial effect of prenatal care, though some of the difficult cases "go private" when difficulties arise, and the series is still quite small. The differences in this table in proportion of neonatal and stillbirths as reported by the Catholic and non-sectarian hospitals suggests the question whether in case of doubt a stillborn child is not reported as a live birth following baptism as such. Gagnon refers to this matter as follows, explaining "The point of view of Roman Catholic physicians, who in case of doubt as to the presence of life in a newborn child, will declare it born alive on the death certificate while his Protestant confreres will pronounce it a stillbirth."

		Neonatals	Stillbirths
Hartford Hospital	(7.6)	3.3	9
St. Francis	(7.95)	5.3	1
Hartford Dispensary	(1.63)	0	1
Private physicians		50	48
Unknown (no care)		41	40

Dr. C. P. Botsford, Health officer of Hartford, reported an interesting though brief study of part of this same material in the Annual Report of the Board of Health for 1930, as follows:

"An attempt was made to study the causes back of the deaths of infants under one year of age. This was late in getting started and only covers the last five months of the year. Seventy-nine babies died during this period. Detailed histories were secured from 66. Of this number 38 died of prenatal causes, and in only one case had the mother had five prenatal visits which may be taken as the minimum of adequate care. Twenty-eight babies in the group died of causes developing after birth. Twenty-three of these had not been under the supervision of a physician or nurse before the beginning of the illness. Five only had any medical or nursing supervision. Stated in percentage, in 97 per cent of the deaths from prenatal causes the mother had not had adequate prenatal care, and in 81 per cent of those from postnatal causes there had been no medical or nursing supervision before the illness. With the prenatal, postnatal and child welfare services available at the clinics of the hospital, the Hartford Dispensary and the city, there are sufficient facilities for all mothers and babies not receiving adequate care from their physicians. The difficulty seems to be in convincing a certain type of mother of the need of the service."

Such studies can be made quite easily by medically trained health officers who have available the services of a good visiting nurse association. From an educational point of view this method of study is very profitable for it brings the nurse in touch with cases where neglect has caused death in time to forestall future losses.

The type of delivery is shown as follows in percentages:

Type of Delivery	Neonatals		Stillbirths	
	Res.	Non-Res.	Res.	Non-Res.
Spontaneous	65	46	50	33
Induction only	2.3	7	8	4.1
Operative	33	46	42	61

Twenty physicians who delivered the most babies accounted for 1809 or forty-one per cent

of the total. Eighteen delivered more than 50 and six more than 100 each. These twenty physicians had 59 neonatal deaths (45 per cent) although in 14 instances the case was handled for another physician. They had 32 stillbirths of which 10 were not their own cases. So one can say that these twenty handled 41 per cent of the total deliveries and had (of their own cases) 34 per cent of the total neonatal deaths and 22 per cent of the stillbirths. This is not quite an accurate statement of the rates for no figures are available to show just how many "own" cases these twenty delivered. These figures show in some measure the extent of the "grief" of consultation work.

I wish to acknowledge with thanks the hearty coöperation and help given me by Dr. C. P. Botsford and Mr. M. B. Yaw of the Hartford Board of Health and to Mr. W. A. Welling, Director of the Bureau of Vital Statistics of the State Department of Health.

REFERENCES

1 Dublin, Louis I., and Corbin, Hazel: A preliminary report of a study of records of the Maternity Center Association of New York. Am. J. Obst. & Gynec. 20: 877 (Dec.) 1930.
2 Annual report of Visiting Nurse Association, Detroit, Michigan, for 1930.
3 The seven years of the maternity and infancy act. U. S. Dept. of Labor, Children's Bureau, p. 20.
4 Monthly epidemiological report of the health section of the Secretary, League of Nations, Geneva, July 15, 1930.
5 Miller, James R.: A study of puerperal mortality in Hartford from 1909 to 1928. Proceedings of the Connecticut State Medical Society 1929, p. 148 (reprint furnished on request).
6 Gagnon, Eugene: What is a stillbirth? Canad. Pub. Health J. 22: 16 (Jan.) 1931.

THE ECONOMIC PROBLEMS OF THE GRADUATE NURSE

Nine months of work in the year — that is the most a nurse can hope for in the United States today. The average nurse won't actually get that much.

Exact figures on the oversupply of nurses in this country were made public at San Antonio, Texas, April 12, when Dr. May Ayres Burgess, director of the Committee on the Grading of Nursing Schools, told 4,000 members of the already agitated nursing profession that no more than 273 days of work in the year are available for the average nurse. Dr. Burgess spoke before a session of the biennial convention of the three national nursing organizations, the general topic being "Nursing at the Crossroads."

This nine months of work for each nurse would be possible only if nurses served all the sick Negroes in the South and if all the very poor and all the sick in remote rural districts were adequately nursed during severe illness. Moreover, these 273 days of employment would actually be available only if sickness were distributed evenly throughout the year and divided evenly among all nurses.

"This year 25,000 young women for whom there is no work will be graduated from the nurses' training schools," Dr. Burgess declared. "Next year there will be another 25,000, and the year after that still another. In the ten years from 1920 to 1930, the population of the entire United States has increased 16 per cent, but the number of graduate nurses has increased 97 per cent. The United States Census gives a total for 1930 of 294,268 trained nurses."

High school principals and teachers must be made to realize the conditions in nursing, it was pointed out. No second-rate high school student has definite promise of being self-supporting in nursing today. Only the best students in the graduating class should be encouraged to go into nursing, because they are the only ones who are likely to be successful in an overcrowded and highly competitive field.

"Overproduction is bad," Dr. Burgess told the nurses, "because it means unemployment and distress to the present generation of nurses. It is even more serious because it means a sharply curtailed supply of intelligent young nurses for the future. The only way to attract the intelligent girl into nursing is to demonstrate through the happiness and success of the women who already belong that the profession is a desirable one to enter. That is why the most important task for nursing today is to reduce the numbers of new nurses entering the field and to make it possible for every qualified nurse to earn a satisfactory living."

Dr. Burgess believes that the only way out is for the nurses to go into partnership with the public. Closing hospital training schools for nurses will not come as a purely voluntary measure. Superintendents of hospitals and superintendents of nurses sincerely believe that their schools are better than others and that their graduates are needed in increasing numbers, even though there is unemployment among their alumnae at the present time.

Dr. Burgess outlined four tasks for the nurses in securing a working partnership with the public. They are as follows:

1. To give full publicity to the facts about the overproduction of nurses and the necessity for choosing new students with the utmost care.
2. To obtain close personal contact with influential citizens, so that those who shape public opinion may become interested and informed concerning nursing problems.
3. To be on the alert through local nursing organizations to work with the public on the side of desirable public health movements, so that community leaders will learn to look to the nursing organizations for coöperation.
4. To wage an effective campaign against any attempt to continue or increase the overproduction of nurses in that community.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 18191

PAIN IN THE FRONT OF THE CHEST OF ONE AND ONE HALF HOURS' DURATION

MEDICAL DEPARTMENT

A Canadian street railway conductor forty-five years old entered complaining of pain in the chest an hour and a half in duration.

He had felt in his usual good health until he was suddenly seized while at work with agonizing squeezing pain in the lower part of both chests and the upper part of his abdomen. It was diffuse, with no point of maximum intensity. He had never had anything of the sort before. He suddenly collapsed, sweat profusely and became much frightened. He did not lose consciousness. He had always felt perfectly well before except for some dyspnea on exertion for years and occasional very transient twinges of precordial pain on exertion.

His family history is not significant.

He had had no illnesses. Several years before admission he had a broken malar bone.

Clinical examination showed a well nourished pale middle aged man writhing in bed complaining of excruciating chest pain and sweating all over. The skin felt cold. There was cyanosis of the lips. The apex impulse of the heart was not seen or felt. The left border of dullness was 10 centimeters to the left of midsternum, one centimeter outside the midclavicular line. The right border was not determined. The supracardiac dullness was 6 centimeters. The action was slow (48). The sounds were of very poor quality, the beats varying in intensity but regular, with occasional ectopic beats. No murmurs were heard, and no friction rub. The pulse was slow and very poor in quality. The blood pressure was 180/130 to 115/90. The abdomen showed tenderness in the epigastrium, but no spasm. The genitals, extremities, pupils and reflexes were normal.

The urine was normal in amount. The specific gravity was 1.035 to 1.031. There was a green test for sugar at one of three examinations. The sediment showed rare white cells to 10 per field at all three examinations. Blood examination showed 11,800 to 16,500 white cells, 90 to 71 per cent polynuclears, hemoglobin 75 per cent, reds 4,950,000. One of two smears showed many degenerating polynuclears; otherwise both smears were normal. A Hinton test was negative. The non-protein nitrogen was 47 to 33 milligrams.

An electrocardiogram the day of admission showed partial auricular-ventricular block, frequent dropped beats, auricular rate 85 and 100, ventricular rate 50 and 65, diphasic T_1, high origin T_2 and T_3 (Pardee's sign). Dr. White noted, "Remarkable record. T_3 comes off the QRS 5 millimeters above the base line." A second electrocardiogram the following day showed normal rhythm, rate 60 without block, high origin T_2 and T_3 as before, less marked; inverted P_2, slight left axis deviation. A third electrocardiogram made the day of the second showed in all lead II, second strip, changing auricular pacemaker, upright and inverted P wave. A fourth electrocardiogram made on the same day showed the same disturbance in the auricular pacemaker, at times lengthening the PR interval to 0.3 seconds. On the sixth day a fifth electrocardiogram showed normal rhythm, rate 90, high origin T_2 and T_3, slight left axis deviation.

The temperature was 97.3° to 101.1° with one drop to 96°. The pulse was 53 to 126. The respirations were 10 (morphia) to 26.

Observation in the wards showed that what were thought at admission to be extrasystoles were occasional runs of 1:1 rhythm. Two days after admission a well marked friction rub was heard just medial to the point of maximum intensity of the heart beat. Later in the morning this could not be heard by anyone. The patient continued to have pain and needed much morphia. The blood pressure fell. The pulse became regular, but the heart sounds continued poor. Four days after admission the patient felt better and no longer was nauseated. The pain was nearly gone. For the next two days he had no pain. On the fifth day there was a scratchy sound at the apex thought to be a friction rub. It was not to and fro, but the following day there was a definite to and fro rub. The white blood count was falling. For the next two days he had a few momentary twinges of pain, but had a good appetite and felt well. By the tenth day the rub could no longer be heard and symptomatically he was in excellent condition.

On the morning of the thirteenth day the patient was feeling very well and asked to be allowed to sit on the edge of the bed. Permission was refused. Nevertheless he sat up in bed and developed a sudden pain all over the chest. The pulse was grossly irregular, the rate 48 at the wrist, with alternation. The blood pressure was 128/108. He was given a quarter of a grain of morphia, repeated a half hour later, when his pulse was regular at 160. Thirty minutes later he began to have deep gasping respirations, became unconscious and soon died. Adrenalin was given into the heart.

Clinical Discussion

BY RICHARD C. CABOT, M.D., AND MAURICE FREMONT-SMITH, M.D.

NOTES ON THE HISTORY

Dr. Cabot: What does that description of the pain sound like?

Students: Angina.

Dr. Cabot: Yes, or rather coronary block. Of course it is abdominal too. The chest is mentioned first however, and the fact that it is mentioned first and that "squeezing" is mentioned makes us think of the coronaries.

We could not ask for a better history leading up to what looks like coronary block. He has dyspnea at forty-five, a time when he has no good right to have it.

Dr. Fremont-Smith: What would be the history if he had spontaneous pneumothorax? Should we have much more dyspnea compared with the amount of pain?

Dr. Cabot: That is it. I do not remember any cases where the pain was comparable with the dyspnea. Of course perforative peritonitis starting with perforation of an ulcer will give pain just as sudden and just as bad, but I do not think it is so often referred to the chest or spoken of as "squeezing".

NOTES ON THE PHYSICAL EXAMINATION

I am rather surprised at the writhing; I should have supposed he would be quiet.

There is nothing said, you see, about the abdomen in the latter part of the record.

The blood pressure is higher than one would expect in a man who has so recently been in collapse.

I should call this a normal urine.

It is very difficult to be sure of degenerating polynuclears. Slight slips in technic can make nuclei appear degenerated. I am very dubious about those degenerating polynuclears.

That is essentially normal blood,—possibly slight leukocytosis.

Pardee's sign is often referred to as Pardee's sign of a blocked coronary. Dr. Pardee first saw the high point of origin of the T wave in these cases.

The PR interval was lengthened from a normal 0.2 up to 0.3.

The later history shows the settling down process one ordinarily gets after coronary block. Everything points to that; nothing points to anything else.

Of course in such a case we are always looking for a pericardial friction rub. Undoubtedly they looked for that several times a day, because pericarditis often comes over an infarcted piece of the heart muscle.

His pain has lasted beyond the length of time when we could possibly think of it as angina.

"He had a good appetite and felt well." In other words he seems to be getting over this infarction. The only question is to see whether it can now be organized into a fibrous patch in the heart or whether he is going to have another infarction.

Adrenalin had as usual very little effect.

DIFFERENTIAL DIAGNOSIS

I should say that this case is either perfectly easy, as I believe, or entirely impossible of diagnosis. If it is anything else than what it seems to be it is entirely impossible to diagnose. It was a single coronary block with recurrence, extension or something that prevented its going on to healing—which I believe to be the usual course of coronary block. When we began to talk about these blocks and did not know so much about them as we do now, we thought of them as fatal occurrences, fatal in a few hours or days. Now we recognize that they recur and that very few are fatal in the first occurrence. One of the many mysterious things about these lesions is that some of them occur absolutely without pain. A man who has watched himself and does not know of any acute event has been known to show post mortem a great patch of fibrous tissue in the muscle of the heart, while another man with a much smaller infarct will have a great deal of pain. I do not understand the reasons for those clinical variations. I should think it is more than probable we shall find here signs of an old infarct, about which he knew nothing, and that all we have evidence about was a later infarction months or years after the first one. I am sure these patients live as many as five years, sometimes longer, after the first infarct.

Dr. Tracy B. Mallory: We did an autopsy a month ago on a patient of Dr. Paul D. White's who had an infarct seventeen years before death.

Dr. Cabot: I think it is very interesting to get cases like that into our minds, because we have got into the habit of thinking the thing comes once and kills at once.

Dr. Fremont-Smith: I have heard Dr. White say that a patient who has frequent anginal attacks—he described the situation as due to an oversensitive artery—that such a patient might have an occlusion of that artery and after that be entirely free from anginal pain.

Dr. Cabot: What shall we say of this patient then? One would say that the heart, according to the clinical record, should be slightly enlarged, as shown by the position of the apex beat and left axis deviation. Apparently the enlargement concerns the left ventricle rather than the right. There is no reason to suppose a valve lesion. There is every reason to suppose a coronary lesion and one or more infarctions, old or new—I believe, on the general doctrine of chances, old as well as new. Did he have peri-

carditis with it? Quite possibly. The fact that they heard a rub however does not in any way prove it. Was there intracardiac thrombosis, too? Probably; most cases have it. We have however no evidence of embolism from a detached fragment of such a thrombus. The terminal events do not fit with embolism in any place other than the coronaries themselves. I see no reason to suspect any of the other organs. The lungs, abdomen, kidneys and so forth have not been incriminated by any of the symptoms.

DR. FREMONT-SMITH: What is the usual etiology in these very early cases, at forty-five? Is it usually arteriosclerosis?

DR. CABOT: I think so. I do not believe we can prove syphilis or any other particular cause. If someone says, "Why does a person have arteriosclerosis at forty-five?" I do not know any answer. I suppose certain families have it earlier than others. If we knew something about this family we might be able to prove something in regard to that cause.

A STUDENT: If this man had died of pulmonary embolism what would the symptoms have been?

DR. CABOT: In the first place I should say there might have been none at all. A great many cases have none. If he had any symptoms I should say there should be more cyanosis than he showed. He had, you see, deep, gasping respiration. That is not in any way characteristic that I know. I think your question is a difficult one to answer because pulmonary embolism comes with such a variety of symptoms. If we can make the diagnosis it is on sudden cyanosis with dyspnea. Here he has some dyspnea, but there is nothing said about cyanosis. Sometimes the pain in the chest is somewhere in the side on which the embolism happens. We have nothing of that here. Sometimes of course there is spitting of blood.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Hypertensive heart disease.
Coronary occlusion.

DR. RICHARD C. CABOT'S DIAGNOSES

Arteriosclerosis.
Coronary occlusion.
Infarcts of the heart, old and recent.
Hypertrophy of the heart, chiefly of the left ventricle.
Probably intracardiac thrombosis.

ANATOMIC DIAGNOSES

Arteriosclerosis.
Coronary sclerosis.
Coronary thrombosis with occlusion, old and recent.
Infarcts of the heart, recent.
Hypertrophy of the heart, hypertensive.
Fibrinous pericarditis.
Slight acute endocarditis of the aortic valve.
Slight chronic vascular nephritis.
Emphysematous blebs of the lungs.

PATHOLOGIC DISCUSSION

DR. MALLORY: We found two infarcts of the heart, both relatively fresh. One involved the posterior surface of the left ventricle and ran over on to the interventricular septum. The other involved the lateral wall of the right ventricle. The coronary arteries showed an extreme degree of atheroma, both the circumflex and the descending branches of the left coronary being practically occluded by atheromatous plaques. The right circumflex artery contained two thrombi, a rather old one pretty well down in the vessel and a fresher one nearer its origin.

There was nothing else of any importance.

DR. CABOT: How much did the heart weigh?

DR. MALLORY: 500 grams.

DR. CABOT: Was the hypertrophy mostly of the left ventricle?

DR. MALLORY: There was fairly uniform hypertrophy in this case.

DR. FREMONT-SMITH: Was there a pericarditis?

DR. MALLORY: Yes. The pericardium contained 150 cubic centimeters of blood tinged fluid. The pericardial surfaces were very granular and were covered with a thick coat of fibrin. The pericardium was firmly adherent to the epicardium over an area 3 centimeters in diameter at the base of the right ventricle. There was no definite sign of old infarct there however.

A STUDENT: Did the kidneys show anything?

DR. MALLORY: They were a little granular, but they were not contracted at all. I have very little doubt that we shall find some microscopic changes.

A STUDENT: Is there a certain type of heart disease and hypertension in which you get a kidney condition characterized perhaps by arteriolar lesions rather than sclerotic lesions of the arteries?

DR. MALLORY: I have never been convinced that when the lesions are limited to the larger arteries of the kidneys there are any symptoms from them at all. I think those cases are really equivalent only to a localized nephrectomy. If we take out one kidney it does not cause any symptoms. If we completely kill off a large amount of renal substance it does not produce renal insufficiency because the remainder of the kidneys very readily takes over the function. We have a different situation however when practically every glomerulus is affected by involvement of almost every small artery; then invariably we get symptoms.

DR. CABOT: Did he have a clot inside the heart?

DR. MALLORY: There was no thrombosis.

DR. CABOT: Why not? Why do you not always have that?

DR. MALLORY: I suppose it depends on whether the endothelial cells die or not. I do not particularly see why they should die. It seems as though they should be adequately nourished with the blood stream circulating over them by osmosis from the cardiac cavity, but very often they obviously are not.

DR. CABOT: Were the arteries in the rest of the body very sclerotic?

DR. MALLORY: Yes. He had a good deal more arteriosclerosis than the average man of forty-five would have, although the process had gone considerably further in the coronaries than anywhere else. There seemed to be a certain selective progression there, as is often the case.

CASE 18192

ABDOMINAL AND PULMONARY SIGNS AND SYMPTOMS ACCOMPANYING ACUTE RHEUMATIC FEVER

CHILDREN'S MEDICAL DEPARTMENT

PRESENTATION OF CASE

DR. F. A. HARRISON*: A white boy of eleven was admitted on January 4 complaining of orthopnea and precordial pain.

His father, mother and seven siblings were living and well. There were no other cases of rheumatic fever.

His early development was normal. He had bronchitis followed by pneumonia at three years, measles at five and pertussis of moderate severity at seven.

The patient was first seen in the Outpatient Department in April, two years and nine months before admission. His heart was normal but his tonsils were enlarged, cryptic and chronically inflamed. They were removed in May.

On October 29 he developed chorea; the onset was acute and the condition lasted until the following February; he had mild fever at times. The chorea was of moderate severity. On February 1 the heart was described as normal. On February 22 he suddenly had an acute attack of arthritis with a fever of 105° at the onset. There were "red blotches" over the body and small nodules. The illness lasted two months. In May he was seen in the Outpatient Department. The heart was enlarged and nodules were found over the elbows and knees. In December there was a second attack of rheumatic fever lasting one month. In April of the following year a third attack occurred, also lasting one month. He returned to school after this attack, but his activities were limited. On August 21 a diastolic murmur was heard and interpreted as mitral stenosis. On December 15 a fourth attack of rheumatic fever occurred. Orthopnea, precordial pain and occasional abdominal pain were so marked that on January 4 he was admitted to the hospital through the Outpatient Department.

The patient was a very pale boy with flushed cheeks, markedly orthopneic, complaining of precordial pain. Rheumatic nodules were found at both elbows. There was a dry cough. There was dullness at both bases with râles. The heart was enlarged to the midaxillary line on the left and 4 centimeters beyond the midsternal line on the right. A friction rub was heard at the apex extending to the right border of the heart. The liver was 2 centimeters below the costal margin, pulsating and very tender. There were both diastolic and systolic murmurs heard at the apex and over the body of the heart. The pulse was rapid and collapsing. The blood pressure was 132/60.

The temperature was 104°, the pulse 160. The respirations were 80.

The urine was negative. The red blood cell count was 4,500,000, the white cell count 25,000, the polynuclears 87 per cent, the lymphocytes 13 per cent.

After admission the patient showed deep jaundice. This cleared rapidly. Two days after admission all the symptoms had increased markedly in severity and the child was very sick. A pericardial tap was done and 6 ounces of fluid removed, giving immense relief. The temperature dropped from 104° to 100°, the pulse from 140 to 110, the respirations to 40. Ten days later the child developed fever and had increased pain, orthopnea and restlessness. It was felt that dilatation of the heart rather than pericardial fluid was the outstanding cause of the symptoms. For twelve days the temperature, pulse and respirations remained fairly constant at approximately 102.5°, 130 and 45 respectively. On the sixteenth day pitting edema of the wrists and ankles was first noted. The liver edge was 5 centimeters below the costal margin. There was increasingly marked dullness at the bases. The blood pressure was 98/58. On the seventeenth day orthopnea and pain increased markedly. The patient died on the eighteenth day.

DR. GEORGE W. HOLMES: The heart shadow is enormously enlarged. In this film the enlargement is in the form of an isosceles triangle, about the same on both sides. In addition to that there is a good deal of dullness in the lungs which might be passive congestion and which obscures the outline of the heart to some extent. A heart shadow of such a shape would of course make one think of pericardial effusion. From the x-ray alone, a single film like this, one could not distinguish definitely pericardial effusion and dilatation of the heart. The other data we should like are the change in shape with

*Interne on the Children's Medical service.

change in position of the patient, the character of the pulsations as shown by the fluoroscope, and a lateral view to show whether the posterior angle was obliterated or not. This film is consistent with effusion.

DR. TRACY B. MALLORY: Can you make out anything in the lungs?

DR. HOLMES: There is dullness in both lungs, whether due to passive congestion or bronchopneumonia I cannot tell.

CLINICAL DISCUSSION

DR. HAROLD L. HIGGINS: This is a case of acute rheumatic fever. It is rather interesting that all the symptoms of rheumatic fever started after the tonsils were removed. It is also interesting that the first manifestation of any rheumatic fever at all was his chorea, which was first noticed on October 29, two years and three months before death. The heart was normal on February 1 of the following year, and six months later, August 21, a diagnosis of mitral stenosis was made. The child at admission to the hospital had a definite aortic regurgitation with a collapsing pulse and pericarditis. At autopsy we were very much interested to know whether there was any mitral stenosis. My impression is that it takes several years for clinical symptoms to develop from a mitral stenosis. I feel that a diastolic murmur noted six months after the onset of heart trouble in all probability means an aortic lesion.

DR. PAUL D. WHITE: A further point of interest in this case was whether or not more fluid accumulated in the pericardium to produce the symptoms and signs that occurred after the first tap. The area of cardiac dullness remained large and the signs of failure continued to develop, which signs may of course develop with pericardial effusion as well as with actual heart failure. It was difficult to decide whether the heart was failing purely as the result of the acute infection. An acute rheumatic heart may get quite large without much valvular disease or pericardial effusion. It is noted here that it was thought that heart failure and not recurrent pericardial effusion was responsible for the late symptoms and signs. The myocardium was undoubtedly involved as well as the pericardium and endocardium, and such involvement may well have played the chief part in the heart failure. The heart muscle may actually be in part destroyed. Here then is a child with rheumatic infection of the myocardium and the pericardium in addition to valve lesions.

It is quite likely that some murmurs heard during acute or subacute heart infections are associated with heart failure and not with valvular disease, though not necessarily in this case. A systolic murmur at the apex and even an apical middiastolic murmur of the so-called mitral stenotic type may be associated with left ventricular dilatation. Dr. Wood and I* found several years ago that several cases with so-called mitral diastolic murmurs which were diagnosed as having either mitral stenosis or aortic regurgitation actually had neither, but simply had dilated left ventricles, usually with pericardial involvement too. We felt that the mechanism of the production of their murmurs was relative stenosis of the mitral valve; compared with the size of the left ventricular cavity the valve was relatively stenosed even though its actual circumference was normal. Such a disproportion might easily produce the murmurs. A follow-up of some young children diagnosed at first as early mitral stenosis failed to show actual mitral stenosis in some cases. Sometimes the murmur has disappeared, a thing which would not occur if there were well-marked organic mitral stenosis. There will probably have to be a slight revision of the old idea that a middiastolic murmur at the apex always means mitral stenosis in the absence of aortic regurgitation, for it is certain that a middiastolic murmur at the apex is not always to be associated with actual mitral stenosis or even to be regarded as an Austin Flint murmur. There is a question in my mind whether the mitral diastolic (Austin Flint) murmur found in cases of aortic regurgitation is due to the mechanism to which it is generally attributed, that is to a regurgitant stream from the aorta compressing the anterior cusp of the mitral valve; it may more probably be due to the widely dilated left ventricle which is commonly present in aortic regurgitation, the dilatation causing a great difference between the size of the left ventricle and the size (caliber) of the normal mitral valve, resulting in relative mitral stenosis. This is a more or less academic question, and yet it is probably of some importance in the early diagnosis of mitral stenosis at the beginning of rheumatic heart disease. In the course of time we shall know more about it; at present we must remain rather uncertain as to just the significance of apical murmurs in each case. Moreover it is even possible that a slight prolongation of a normal third sound may make a very slight middiastolic murmur, which may be a normal physiological event with a forceful heart. That is a question to be settled in the future. It remains true, however, that a loud mitral diastolic murmur almost invariably does mean organic mitral stenosis.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Pancarditis, rheumatic.

DR. HAROLD L. HIGGINS' DIAGNOSES

Acute rheumatic fever, recurrent.

Chronic endocarditis; aortic insufficiency* and mitral insufficiency.

*J. Edwin Wood and Paul D. White. The Interpretation of Mitral Diastolic and Aortic Systolic Murmurs. Medical Clinics of North America, 1923, VII:729.

Acute pericarditis* with effusion.
Acute myocarditis.*

ANATOMIC DIAGNOSES

Rheumatic pancarditis: chronic and acute endocarditis of the aortic and mitral valves; aortic regurgitation; mitral stenosis; acute pericarditis.
Acute pleuritis.
Possibly beginning peritonitis, rheumatic.
Rheumatic pneumonitis?
Chronic passive congestion.
Focal necrosis of the spleen.

PATHOLOGIC DISCUSSION

DR. MALLORY: Autopsy on this case showed an acute and chronic rheumatic pancarditis. We found both fresh and old lesions on the aortic and mitral valves. The lesion of the aortic was certainly sufficient to have produced definite regurgitation. I think there was also some degree of true stenosis of the mitral valve. The two flaps were definitely interadherent. At the margins it was impossible to tell where one flap stopped and the other began. It was not a very marked degree however; perhaps this relative factor of which Dr. White has been speaking may have played a considerable rôle. There was an acute pericarditis also, an acute pleuritis, bilateral, and a very slight degree of frosting and roughening of the surfaces of the liver and spleen which possibly might have been the beginning of peritonitis of the rheumatic type. That was much less marked than the other two.

What interested us particularly from the pathologic point of view in the case was the lungs, which showed scattered throughout all the lobes, most marked in the left lower lobe, areas which were firmer than normal, somewhat atelectatic, red, but not quite so intensely blackish red as infarcts usually are and not so sharply demarkated. The case being still a relatively early one of rheumatic infection, with no thrombi in any of the auricles, it seemed improbable that they could be real infarcts. The question came up whether this might be so-called rheumatic pneumonia or rheumatic pneumonitis. I personally know very little about that, as we have not recognized a case here, unless this be one. The descriptions in the textbooks and the literature vary a great deal. There seems to be considerable national difference. It is hardly ever found in Germany and it is frequently found in England. Of course that may represent difference in opinion in the two countries or it may actually mean a real difference in incidence, because there are plenty of other well-established differences in the types of rheumatic involvement in localized geographic areas, such as the high percentage of subcutaneous nodules in England. Estimates of the frequency with which true rheumatic pneumonitis occurs in the lung vary all the way from 1 per cent to 15 per cent. With considerable frequency lesions can be found microscopically in the smaller pulmonary arteries. The majority of people who have carefully investigated autopsy material from this point of view put the figures up to perhaps 10 or 15 per cent. The amount of consolidation seems to be very doubtful.

The microscopic sections from the left ventricle show that the perivascular connective tissue is considerably increased in amount around the small arteries. There is a considerable number of very definite Aschoff granules, so that there is no question but there was acute myocarditis. There was a fibrinous exudate on the pericardial surface, considerable thickening of the pericardium, and a certain amount of true interstitial edema of the heart. Sections from the parietal pericardium show large cyst-like cavities lined with what looks like epithelium. It is common in organizing pericarditis and also in pleuritis for such cysts lined by epithelial-like cells to be found, and cases are known where the condition actually has been mistaken for adenocarcinoma. The valve lesions were both acute and chronic in type.

The lung shows an extraordinary picture which I feel incapable of analyzing as yet. The predominant feature is the scattered lobular and multilobular foci of hemorrhage into alveoli without leukocytic exudation. There is a rather diffuse moderate atelectasis. Approximately one third of the alveoli average about two thirds the normal diameter. The remaining two thirds of the alveoli are almost completely collapsed. In some areas the degree of collapse becomes more marked still. In the partially collapsed alveoli there is a marked accumulation of mononuclear leukocytes with occasionally little bits of fibrin here and there. The condition is not ordinary pneumonia at all. There is also rather diffuse thickening of the alveolar walls and there are a great many areas where polymorphonuclear leukocytes are present in the alveolar capillaries in large numbers but are not found in the lumina. The arteries are for the most part normal in appearance. Numerous bronchioles show an obliterative fibrous process, evidently an organizing bronchiolitis. In the sections made from the more deeply hemorrhagic portions of the specimen all the alveoli are filled with red cells with small amounts of fibrin but practically no leukocytes. On the other hand, in the alveolar walls one has many leukocytes and also occasionally fibrinous thrombi. Immediately around the arteries the lungs seem to be less involved than elsewhere. The general picture would make one think of

*The more important lesions are starred.

infarction, but there is no trace of necrosis in the alveolar walls, so we can rule that out.

The liver shows extreme degeneration. Only fibrous tissue and capillary blood vessels are left in the central three quarters of the lobule. This is the type of liver which if the patient had lived a little longer would undoubtedly have resulted in "cardiac cirrhosis". There were also scattered acute lesions in the spleen consisting of fibrin and hemorrhage in the pulp but not having at all the distribution of infarctions. They were quite different in appearance from any lesion with which I am familiar.

DR. WHITE: As we first expected, the valves were involved in this case as well as the myocardium and the pericardium. It is possible but not usual to find that cardiac dilatation alone with myocardial involvement and without valvular disease can account for such murmurs as were heard in this case. The murmurs were typical of mitral and aortic valve disease, although the myocardial disease and dilatation may well have played a rôle too.

DR. MALLORY: Dr. Jones, have you had any experience with these lung lesions?

DR. T. DUCKETT JONES: I have seen a good many microscopic sections of such lesions. I saw some of the original slides reported by Naish in England four or five years ago. At that time the slides were carefully studied by several pathologists and investigators, and the consensus of opinion was that a diagnosis of rheumatic pneumonia was not justifiable. Since that time there has been such a tremendous amount of work done both in England and in this country that it seems proved beyond a shadow of doubt that there are rheumatic pulmonary changes of a transitory type present in many rheumatic fever cases. We certainly get pulmonary artery changes even where there are no definite areas of consolidation. Varied nomenclature has been used. It is characteristic that most cases seem to be of an extensive hemorrhagic character. Some of the investigators have as you know reported the presence of large mononuclears, probably an endothelial type of cell, and some of them have gone so far as to report certain Aschoff-like cells. The nature of the process is, I think, not understood. As to calling it definite pneumonia, or even pulmonary solidification, which is a rather vague term used by Coburn, I am not too certain. It usually occurs in patients acutely ill with rheumatic fever. I wonder if the condition is not a part of the general blood vessel disease picture which is found in rheumatic fever. It is common to find small hemorrhages into the pleura and pericardium in fatal cases of severe rheumatic infection. Hence hemorrhage and arterial changes are quite extensive and commonly found in rheumatic fever. I have had little actual clinical experience with such pulmonary lesions.

DR. MALLORY: I find it very difficult to reach a conclusion as to the significance of the pulmonary lesions in this case. When one is dealing with a lung that has been congested for a matter of weeks to months from myocardial failure, there is always the possibility of infarction. It is also extremely difficult to rule out simple terminal bronchopneumonia. The hemorrhagic character of the lesion might be accounted for in this case by the terminal purpuric tendency. In both idiopathic and secondary purpuras I have seen an infectious process determine the localization of hemorrhage, just as trauma will do it. On the whole, however, the lung findings in this case correspond closely to the descriptions of the so-called typical rheumatic lung lesion, and we finally felt that that was what we were dealing with.

DR. WHITE: Isn't it your understanding that the hemorrhagic character is one of the important points in reference to rheumatic lung lesions?

DR. JONES: I think it has been generally accepted as perhaps the most outstanding feature of such changes.

DR. MALLORY: I think the liver is of some interest in this case. My father has claimed for years that necrosis occurring in cases of heart disease with chronic passive congestion resulting in the so-called nutmeg liver is not due merely to mechanical blocking of the circulation, but to a considerable extent to a toxic process killing off the liver cells. Congestion will cause some degree of degeneration, but it does not actually kill the liver cells. This was one of the most extreme degrees of liver necrosis I have ever seen, and in a child with a total history of only a year and a half, I think it suggests very strongly that the infectious process is more important in producing necrosis than any mechanical element.

DR. HOWARD B. SPRAGUE: It is interesting to see that he had a tendency to hemorrhage. The final picture was one of diffusely distributed red spots, hemorrhage into the skin. That fits very well with the bleeding in the lung. A certain group of rheumatic patients show a tendency to have bleeding from the nose, under the skin or in the lungs. Probably the subcutaneous bleeding in this case is another manifestation of the rheumatic hemorrhagic diathesis rather than an evidence of septicemia.

DR. MALLORY: The bone marrow here showed nothing abnormal except marked hyperplasia.

The New England
Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY under the jurisdiction of the

COMMITTEE ON PUBLICATIONS

HOMER GAGE, M.D. JOHN W. BARTOL, M.D.
ROGER I. LEE, M.D. ROBERT B. OSGOOD, M.D.
EDWARD W. TAYLOR, M.D.

EDITORIAL STAFF

DAVID L. EDSALL, M.D. STEPHEN RUSHMORE, M.D.
REID HUNT, M.D. HANS ZINSSER, M.D.
JOHN P. SUTHERLAND, M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MINOT, M.D. HENRY R. VIETS, M.D.
FRANK H. LAHEY, M.D. ROBERT N. NYE, M.D.
SHIELDS WARREN, M.D. ROBERT M. GREEN, M.D.

WALTER P. BOWERS, M.D., *Managing Editor*

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. BREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY
PUBLICATION COMMITTEE

D. E. SULLIVAN, M.D. H. H. AMSDEN, M.D.
R. H. MARCOTTE, M.D.

THE VERMONT STATE MEDICAL SOCIETY
PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
J. A. WARK, M.D.

SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, Canada $7.04 per year, $7.56 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 8 The Fenway.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The New England Journal of Medicine, 8 The Fenway, Boston, Mass.

THE ANNUAL MEETING

THE one hundred and fifty-first meeting of the oldest Medical Society with a continuous existence in the United States will be held in the Hotel Statler June 8, 9 and 10. A detailed program appears in this issue.

Although the fiscal year of the Society ends December 31, the June meeting definitely marks the suspension of most of the functions of this organization during the summer and the sessions, both scientific and executive, supplement in a large degree the accomplishments of the preceding months.

The historian of the future may, with propriety, characterize the past year as one of steady progress in dealing with the problems, practice and responsibilities of organized medicine. Statistics show that throughout the land less sickness has invaded the homes of the people, due in large measure to the advancing knowledge of preventive medicine. State organizations having to do with the custodial care of large numbers of our citizens who have mental and physical disabilities under the guidance of physicians, have continued to add to the importance of medicine in the affairs of the State. In its relation to public service the Society has been as ever a stimulating and coördinating power in the promotion of scientific medicine, and a protective bulwark against destructive forces.

A doctor sometimes asks, "Of what use is the Massachusetts Medical Society to me?" To the person who wishes to keep abreast of medical progress the answer will be found in the instruction given in the exercises of the several sections.

Perhaps in a larger way the benefit to the individual member will be in proportion to his own contribution to the affairs of the Society.

One important question immediately before the Officers and the Committee of Arrangements is as to the attendance at the coming meeting, for the figures may be an indication of the appreciation of the value of membership unless there are personal deterrent conditions. Whether the present economic situation may influence the registration is pertinent, but all who are able to attend should make any reasonable sacrifice.

Even though the resources of physicians may have been depleted to a very considerable extent during the recent months, the importance of keeping in touch with the advancing knowledge warrants the sacrifice of time and money. From the program it will be noticed that the subjects presented are of great general interest and cover a very large proportion of the more important fields of practice, thereby conducting valuable postgraduate courses. In addition are opportunities to see and hear the leaders in the profession, make new contacts and establish friendships of enduring value.

Important matters are coming before the profession in the coming year which will necessitate appealing for lay support with respect to cult practice and public health problems. In order to influence public opinion, a united profession is essential.

A large and enthusiastic Annual Meeting will show the Officers of the Society that support will be forthcoming in the future campaign for public endorsement of the policies of organized medicine.

PUBLICITY WITH RESPECT TO HEALTH

WITHIN comparatively recent years organized medicine has emerged from its reticence with respect to placing before the public opinions and announcements relating to medical practice and questions of personal health.

Newspapers have also been reluctant to devote much space to these subjects on the ground that they were not good news items. Very soon, however, authorized announcements contributed to newspapers, setting forth progress in deal-

ing with disease, were found to arouse the interest of subscribers. This feature was seized upon by many publications and has been a growing resource of magazines and the daily press.

Medical societies and committees now find that all kinds of publications are keen to have early notices of every new scientific fact in research or technic of procedure because of an awakened interest in all that pertains to the promotion of health. As an illustration, one may know the essential facts about goiter by a perusal of the bulletin of the *National Better Business Bureau* of April 27, 1932 in which is set forth a warning against false teaching and quackery in the goiter field and on the other hand a clear description of the disease with explanation of its etiology in non-technical language.

This is commendable because it is not paid propaganda designed to promote the interests of any other than the intelligent lay person. It is a service which is both protective and constructive. It will disarm the quack and point the way for the prevention of the disease and the resource of the afflicted person.

Patients and doctors alike now have an effective ally in the ethical press.

Before many years there will be no excuse for resorting to useless remedies and fake doctors except among the illiterate. The newspaper will become more and more the gospel of health.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

HAYDEN, EDWIN PARKER. A.B., M.D. Columbia University College of Physicians and Surgeons 1919. F.A.C.S. Assistant in Surgery, Harvard Medical School. Surgeon to Out-Patients, Massachusetts General, Collis P. Huntington Memorial and Palmer Memorial Hospitals. His subject is Carcinoma of the Rectum. Page 979. Address: 270 Commonwealth Avenue, Boston.

ELEY, R. CANNON. M.D. University of Virginia 1925. Assistant in Pediatrics and Communicable Diseases, Children's Hospital. His subject is Hemophilia: The Anaphylactic Treatment of Acute Emergencies by Passive Sensitization. Page 998. Address: 300 Longwood Avenue, Boston.

MILLER, JAMES RAGLAN. A.B., M.D. Johns Hopkins University Medical Department 1911. F.A.C.S. Assistant Obstetrician and Gynecologist, Hartford Hospital. Gynecologist, Hartford Municipal Hospital. Consulting Gynecologist, Bristol (Conn.) Hospital and Hartford Retreat. His subject is Can Vital Statistics Be Used to Measure the Quality of Maternity Care? Page 999. Address: 179 Allyn Street, Hartford, Conn.

MISCELLANY

A RADIO MESSAGE PREPARED AND SPONSORED BY THE COMMITTEE ON PUBLIC EDUCATION OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE DEPARTMENT OF PUBLIC HEALTH

GROWING STRONG TEETH*

Growing strong healthy teeth may seem like a complicated and difficult thing to do, especially when disease conditions in the mouth, such as tooth decay and pyorrhea, are so prevalent everywhere. Yet it is by no means an impossible task, provided adequate and continuous care of the teeth and gums is to be had from the youngest baby days until middle or even old age. The serious results that follow in the shape of abscessed teeth, pyorrhea, and the consequent lowering of vitality in the whole body when the teeth are neglected have long been known by the medical and dental professions. Today the general public is just beginning to appreciate this close relationship between mouth health and body health and to ask what can be done to prevent dental disease.

Experience among dentists shows quite conclusively that most of the dental ills affecting grown men and women are traceable to some neglect in the very earliest months of life. Even before the child is born, the prospective mother's nutrition and health will positively affect the health and structure of the child's baby teeth. Likewise during the first six years of life, the child's diet and the care of his baby teeth will definitely influence the condition of the permanent teeth to follow. The fact that the young baby should visit the dentist at least by the third year and that such visits should be continued at regular intervals is something you all may know. What happens when parents neglect to have their child's baby teeth cared for is startling and may have serious consequences. For this reason, I am taking this as my subject today, because I believe that the most important time to take active steps in the prevention of all dental disease is during the first six years of life.

The question, "Are the baby teeth worth filling?" is continually asked of dentists and physicians by mothers of young children. For the purposes of our talk today, let us broaden the scope of this question and ask, "Is it worthwhile to care for the baby teeth at home and have the dentist keep the child under his supervision when we know that these baby teeth are going to be lost anyway and replaced with permanent ones later?" If I could draw a word picture for you to show what happens when home care and dental supervision are not given to the temporary teeth or what happens when these teeth are not filled as soon as tooth decay appears, you would have no doubt whatever about the answer to that question. Let us start with the young child who has developed a decayed place in some

*Broadcast February 11, 1932, Station WBZA—4:50 P.M.

baby tooth—we call it a cavity. What happens? Almost at once this tooth becomes sensitive to hot and cold foods, and especially when eating, it is tender. In other words, it hurts to chew food. As a result of this discomfort, two groups of symptoms are likely to appear in which a series of conditions builds up one on another in a sort of "house that Jack built" fashion. The first group of symptoms affect the growth and development of the jaws, face and head, and thereby the health of the child as a whole. The second group affects the nutrition of the child, and, of course, his health also.

When it hurts the child to chew his food, he just does not chew it, and avoids this discomfort either by swallowing his food whole or else limiting his eating to the so-called slop diet—that is, liquids or foods softened to make chewing unnecessary.

Now we all know what happens when we do not exercise any part of our body. The muscles become weak instead of strong, and growth is stunted. That is exactly what happens with the bones and muscles of the jaws when there is no vigorous chewing of food. Lack of use causes a failure of these bones and muscles to develop as they should, and this lack of development may be observed not only in the jaws but in the bones and muscles of the face and even the bones of the whole head. The bad effects of this lack of chewing have been very strikingly proved through experiments by one of our professors in the Harvard Dental School. Young animals were fixed so that they had to do all the chewing on one side of the mouth, with the result that on the side, which was used normally, the muscles and bones grew normally. But on the side where chewing was not done, the bones and muscles failed to develop properly and the bony framework of the whole head was twisted toward the side that was not used.

With the failure of the young child's jaws to grow to normal size, we begin to get immediately into difficulty just as soon as the second teeth start to appear. Because of the fact that there is not enough room for them, they come through crowded or irregularly placed. This in turn means the setting up of more favorable conditions for tooth decay, for when the teeth are crowded, they are not readily cleaned, food is held in the irregular places, and we get both decay and gum troubles. In addition, when the jaws and face have not developed as they should, we have narrow breathing spaces and the child has to make up for this deficiency by breathing through his mouth. Mouth breathing then becomes a habit resulting in a still greater pinching of the upper jaw and then trouble with the tonsils and the back of the nose comes, with frequent colds and sore throats. The lack of proper breathing exercise now results in a narrowing of the chest. The child does not get sufficient oxygen and becomes a prey to infections of the air passages. Also the tendency to decay, which comes as a result of the crowded condition of the teeth, favors the development of infections at the root ends of teeth, including abscesses of both the acute and chronic type which do so much damage to general health.

No one can help feeling that the prevention of all these difficulties would be an important contribution to the health of our children, and prevention of tooth decay in the baby teeth or early attention to it is getting right at the root of the trouble.

The second series of symptoms arising from neglect of the baby teeth has to do with the important question of nutrition.

If the right kind of fuel is used in our automobile engine, if the ignition is in good order, if the valves are tight and the cylinders free from carbon, then combustion is good and the machine runs perfectly.

Good nutrition is necessary to make the body machine run well. But I started to tell you how nutrition may be interfered with, and because of this, how the body machine gets slowed up, runs in second speed so to speak,—all because of decay in baby teeth.

Just as before, decay in the baby tooth makes it tender, it hurts to chew food, and as before when food is not chewed, it is swallowed whole or is washed down in a slop diet. When this happens the stomach and intestine have to do double duty, their own work and that of the teeth too. For a while they may not object to this, but sooner or later they get tired of it and complain of the bad treatment they are getting. We sometimes call this complaining indigestion. If the indigestion continues, and if food is not adequately digested it is not utilized as body fuel, it is not assimilated, we say. Malassimilation is the term used to describe this situation, when food in the stomach and intestine is not properly used by the body for fuel. When food is not assimilated, it is not changed into new tissues and energy, with the result that malnutrition develops, and now we have a substandard or below par child whose body machine is running poorly. A child in this condition is a prey to infections of all kinds and various other diseases. The ounce of prevention under these conditions is, therefore, really worth a ton of cure, and proper care of the baby teeth which will preserve them for their intended uses, is nipping serious trouble in the bud.

These two series of disturbances in the growth and development of the jaws, face and head, and with the nutrition of the preschool, and the school child, are not matters of theory but of fact. We are constantly seeing children who are suffering the more serious effects of neglected baby teeth, and no one who has seen them can, for a moment, doubt the wisdom of giving temporary or baby teeth just as constant, thorough and skillful attention as the permanent teeth should receive. Is it not plainly obvious, therefore, from what has been said that home care and dental supervision of the baby teeth are of the greatest importance to the health of the child?

Some parents have said to me that while they appreciate the importance of having their child's baby teeth attended to, the youngster is so frightened that they cannot get him near a dentist. Well, that is frequently the parents' own fault, for they have in some way or other, perhaps unconsciously, implanted a fear of the dentist into the child's mind.

If the parents' own attitude is as it should be and if the child is started properly with a dentist who knows children, regular visits will be a pleasure rather than otherwise.

So important has the dental care of children become that institutions devoted solely to this purpose have been established. Boston led in this development through the erection of the Forsyth Dental Infirmary for Children, the munificent philanthropy of the Forsyth brothers. At this great institution the care of the baby teeth has been given especial attention. The Massachusetts Dental Society recently passed resolutions urging the importance of early attention to baby teeth. Specialists for this purpose are to be found in all our large cities.

All these facts indicate, then, the genuine importance of this problem. Let me urge you to start the children right. Give them every chance for that abounding good health that is the birthright of every child.

Take care of the baby teeth, and many body ills of later life will be avoided.

AMSTERDAM UNIVERSITY CONFERS AWARDS

Amsterdam University, on the occasion of its tercentenary on April 25, awarded the degree of honorary Doctor of Medicine to Dr. Harvey Cushing of Boston, one of the world's most eminent neurological surgeons. The degree will be conferred on June 28 in the presence of distinguished scholars from all over the world.

Dr. Cushing is a member of many scientific societies. In 1922 he was President of the American College of Surgeons.

Similar degrees will be awarded to Dr. Constantin Levaditi of Paris and Dr. Ludwig Aschoff of Freiburg.

THE TOLL OF BLINDNESS

Lewis H. Carris, Managing Director of the National Society for the Prevention of Blindness, states that industrial activities are probably the chief causes of blindness. He estimates that in American industry over 2,000 workmen lose one or both eyes; that there are 300,000 minor eye injuries and that approximately $50,000,000 is wasted in time lost, compensation and medical bills each year. In addition to industry, firecrackers, air guns, sharp-pointed toys, forks and knives annually contribute to the great toll of children's eyes. The major responsibility, so far as children are concerned, rests with the parents. They must be educated to the dangers inherent to certain toys and other objects used by children at play.

THE APPOINTMENT OF DR. C. STANLEY RAYMOND

Dr. C. Stanley Raymond, formerly Assistant Superintendent at the Walter E. Fernald State School and for the past three years Assistant to the Commissioner of Mental Diseases for Massachusetts, has been appointed Superintendent of the Wrentham (Massachusetts) State School.

ANOTHER DOCTOR CONVICTED OF FRAUD IN CONNECTION WITH CLAIMS FOR DAMAGES

At a trial in the Middlesex Superior Court on April 27, 1932, the jury found Dr. James P. McCue of Hudson guilty of conspiracy to defraud insurance companies by giving fraudulent certificates for alleged injuries due to automobile accidents. Judge Thomas J. Hammond imposed a sentence of one year in the house of correction.

A DRUG CLAIMED TO BE VALUABLE IN AMOEBIC INFECTIONS

A new drug known as Carbarsone with a formula described as carbamino-phenyl-arsenic acid containing 28.3 per cent of arsenic is recommended by Dr. Chauncey D. Leake, Professor of Pharmacology, and Dr. A. C. Reed, Director of the Pacific Institute of Tropical Medicine of the University of California, in treating amoebic infections. This will apply especially to amoebic dysentery and any other amoebic infections of the human intestinal tract. Within the last few months two hundred cases have been effectively treated, according to the announcement by Dr. Leake.

THE MATERNAL MORTALITY REPORTED BY THE NEW YORK CITY LYING-IN HOSPITAL

The mortality record of the New York City Lying-In Hospital Service for three years 1929-31 inclusive is 64 obstetric deaths among 13,427 deliveries of which 10,574 were in the hospital and the remainder were in the homes of patients. This is a total rate of 4.76 per 1000 births. There were 405 deliveries by cesarean operations with 18 deaths in this group. Of the 64 deaths, ten seemed to offer no possibilities of control.

THE IMPORTANCE OF SLEEP IN PROMOTING LONGEVITY

Dr. Theodore B. Appel, Secretary of Health of the Commonwealth of Pennsylvania, has supplied an article in the *United States Daily* in which he sets forth the reasonable contention that regular and adequate amounts of sleep will materially influence the likelihood of longevity. He feels that sleep requirements in a certain proportion of people are not considered or applied and that every person must determine for himself the amount of healthful sleep which is necessary to maintain physical and mental health.

The difficulty seems to be, however, that even

though an individual may have determined his sleep requirements, under stress of circumstances he is likely to disregard them and try to get along with less than the necessary amount. If there is any evidence of debility, one of the most important factors is faithful adherence to one's requirements so far as this method of reconstruction applies.

RELATION OF HIGH VOLTAGE RAYS TO CANCER

Dr. G. Failla, discussing radium and high voltage x-rays, reports that experiments at the Memorial Hospital, New York City, show that high voltage x-rays are more effective for the treatment of cancer than ordinary x-rays, although it was formerly believed that all x-rays had similar effect regardless of their wave length or voltage. Highest voltage x-rays have the shortest wave lengths and radium has still shorter wave length than the highest x-ray voltage.

"The human skin is three to four times more resistant to gamma rays from radium than to ordinary x-rays and this means that a smaller dose of radium than of ordinary x-rays can be used to produce the same effect in treatment," Dr. Failla says.

This may indicate that the future development of high voltage and extremely short wave length of the x-ray may compete with the effect of radium. These statements were made before a recent meeting of the American Geophysical Union.

EXCESSIVE EATING AND EXERCISE

The United States Public Health Service has made public its advice with reference to eating and exercise, paying especial attention to the fact that too little or too much eating or exercise is detrimental to a marked degree.

It is especially emphasized in this statement that proper food must be taken to provide material for growth and repair and to furnish heat and energy for the body. The condition of the circulatory system is of great importance in augmenting the benefits of proper food and exercise. So far as exercise is concerned, it is becoming recognized that arteriosclerosis may be promoted by overexercise quite as much as by irregularities of eating. In a few words it may be said that the arteries are the registry of our indulgences, or of any other form of physical dissipation.

STUDIES OF EPILEPSY

Dr. Irvine McQuarrie, in the course of a clinical session of the American College of Physicians held recently at the University of California Hospital, offered a new explanation of the cause of epilepsy which it is hoped will favorably affect some half million people in the United States.

Dr. McQuarrie believes that epilepsy is caused by an abnormal increase in the permeability of the walls of the brain cells. This increase in permeability causes these cells to lose certain salts, particularly potassium, which are necessary for their normal function, and as a result of this abnormal condition epileptic convulsions occur.

Dr. McQuarrie's evidence is based on investigating the well-established fact that epileptics may be kept relatively free of seizures by reducing the amount of liquids in their diet and that the seizures may again be induced if the liquids are increased.

ANTI-VIVISECTION PROPAGANDA

Regular meetings of the New England Anti-Vivisection Society are being held from time to time and at the last meeting held recently at Tremont Temple, Rev. Frederick E. Heath emphasized his views on the "unparalleled and careless destruction of life in these modern days," stating that "there is a great demand for public education and information to safeguard the lives of both our fellow beings and helpless animals". He paid especial attention to the affection which many people have for pet dogs and affirmed that dogs, rabbits and other animals are the victims of our age in that they are used for study and demonstration in laboratory research work. The Reverend Heath made the spectacular statement that over 3,000 doctors in a recent questionnaire refused to approve such methods of treatment. This indicates that there should be an educational movement to do away with emotional control.

A STUDY OF THE SECRET OF A CANCER CELL

Sir Arthur Keith in a communication to the *London Daily Express* has expressed the hope that parathyroid extract may be useful in its application to malignant growths. He is conservative in suggesting that too much hope should not be based on any experiment at the present time, but that the concentration of intelligent experimentation on the uncontrolled growth of cancer cells is likely to lead to practical results before many years.

PLANNING FOR THE USE OF SERUM IN CASES OF POLIOMYELITIS

Los Angeles County, Calif., has been ascertaining how many of the 314 children attacked by poliomyelitis during the 1930 epidemic received serum to prevent paralysis at the onset of the disease, how effective the treatment was, and how many were not receiving remedial treatment. The addresses are being filed of children willing to donate small quantities of blood from which the serum can be prepared, so that the county health authorities may have a potential source of supply in the event of a future outbreak. This inquiry was part of a general survey of the more than 3,000 crippled children in the county, of whom it has been estimated that approximately 30 per cent are not receiving any form of medical care to lessen their handicaps, according to the *Los Angeles County Health News.—U. S. Children's Bureau, Washington, D. C.*

MORTALITY RATES

Telegraphic returns from 85 cities with a total population of thirty-seven million for the week ending April 23, indicate a mortality rate of 11.9 as against a rate of 12.3 for the corresponding week of last year. The highest rate (21.5) appears for Trenton, N. J., and the lowest (7.1) for Long Beach, Calif. The highest infant mortality rate (15.7) appears for St. Louis, Mo., and the lowest for Evansville, Ind., and Schenectady, N. Y., which reported no infant mortality.

The annual rate for 85 cities is 12.6 for the sixteen weeks of 1932, as against a rate of 13.8 for the corresponding period of the previous year.

ATTENDANCE AT THE STATE MEETING OF THE MASSACHUSETTS DENTAL SOCIETY

It was predicted in the announcement of the Sixty-Eighth Annual Meeting of the Massachusetts Dental Society held recently at the Hotel Statler, Boston, that 4,000 dentists from all parts of the State would be present.

This should be an inspiration to the members of the Massachusetts Medical Society to have an equally proportionate attendance at the Annual Meeting in June.

THE FLOATING HOSPITAL HONORS ITS DONORS

A custom has been adopted by the Floating Hospital of naming a certain day in recognition of the gift of $200. Two days have already been named, one in memory of Robert W. and Nellie A. Milne, and the other in memory of Albert C. Smith. The donor of the sum of $200 has the opportunity of meeting the approximate cost of expenses for that day in memory of a friend or relative or to mark an anniversary.

NOTES FROM THE AMERICAN MEDICAL ASSOCIATION MEETING

A letter from Dr. E. F. Cody reports that all New England members of the House of Delegates of the American Medical Association were present on May 9, the opening day of the New Orleans Meeting.

The committee assignments applying to the New England Delegates are as follows: Dr. D. E. Sullivan, of New Hampshire, Committee on Public Health; Dr. B. L. Bryant, of Maine, Committee on Rules and Order; Dr. W. R. Steiner, of Connecticut, Committee on Report on Officers, of which committee Dr. C. E. Mongan, of Massachusetts, is chairman; Dr. J. Forrest Burnham, of Massachusetts, Committee on Medical Education; Dr. W. G. Ricker, of Vermont, Committee on Sections and Section Work.

The State Medical Society gave a dinner to the House of Delegates and Officers of the American Medical Association on the evening of Monday, May 9.

CORRESPONDENCE

A DEFENSE OF OSTEOPATHY

Massachusetts Osteopathic Society, Inc.
139 Bay State Road
Boston, Mass.

May 4, 1932.

The Editor,
The *New England Journal of Medicine*,

In your issue of March 24, 1932, Dr. Stephen Rushmore, in an article on pages 614 and 615, states as follows:

"As illustrations of what happens to medical sects, four examples may be cited, homeopathy, eclecticism, osteopathy, chiropractic. Everybody knows that in spite of substantial contribution to the stream of medicine, homeopathy, as a sect, is nearly gone. We have among us estimable physicians, who profess and practice homeopathy. They are intelligent, well-trained, skilful in diagnosis and treatment. If we look for schools in which homeopathy is taught, however, and for students who are devoting themselves to homeopathy, we realize how serious has been the decline of the sect.

"Of eclecticism it may be said that as a power in medicine it has passed away.

"Osteopathy, a newer sect, is running the same course, and the chief sign here of the change is the admixture of scientific medicine which is found in the best osteopathic schools, and the efforts toward closer approximation to scientific medicine."

We feel that Dr. Rushmore must have some authority in forming his opinion in regard to osteopathy. It is, however, slightly divergent from the information which we have been able to obtain during the past month. I quote from a letter dated April 20, 1932, from a large osteopathic school:

"As you undoubtedly know we have this year the largest student enrollment in the history of the institution. You are aware of the fact that the college has earned this popularity through the endeavor, year after year, to present adequately a curriculum based on clinical osteopathy. The character of our training has been evidenced by the calibre of the graduates who have gone into the field of practice."

Also information personally received from the President of one of the largest osteopathic schools in the Middle West on April 15, 1932, informs us that they have the largest entering class in the history of the institution which extends over a long period of time.

We also quote from the announcement of the Graduate School curriculum of the same osteopathic school the following:

"Emphasis will be placed upon the osteopathic concept of health and disease. The principles of osteopathy will characterize all the teaching. So-called 'fads' and 'new methods' will not receive much attention, but rather the work of the coming session of the Graduate School will be devoted to

the most modern application of the fundamentals of osteopathic practices. Enthusiastically, the teachers will present the results of much study and practice in the field of applied osteopathy."

The writers are in close touch with the osteopathic educational field as exemplified by "what is found in the best osteopathic schools", and we are forced to conclude that the fact that scientific advancement has not retarded osteopathic development, but on the whole has enhanced it, is additional proof that its philosophy is basically and scientifically sound.

Yours truly,

DR. FRANK M. VAUGHAN,
DR. PERRIN T. WILSON,
Censors for the Massachusetts Osteopathic Society.

OPERATION FOR CARCINOMA OF THE RECTUM

May 7, 1932.

Editor, *New England Journal of Medicine*,

In the report of the Suffolk District Medical Society Meeting on March 30 at the Deaconess Hospital, published in your issue of April 28, it was stated that I favor loop colostomy and posterior resection for carcinoma of the rectum.

The following paragraph states more accurately the type of operation we favor.

While the ideal operation for carcinoma of the colon is resection with primary suture it results in a high mortality in our hands. We use the Mikulicz type of resection in most cases because of its increased safety. For carcinoma of the rectum we prefer the combined abdomino-perineal resection. Because of the relatively high operative mortality with the Miles operation we prefer it divided into two stages after the method described by Dr. Lahey. However, we believe that a loop colostomy with posterior resection is advisable at times, particularly in obese patients and in poor risk patients. It is quite important not to apply any one operation to all lesions of the colon, nor any one operation to all lesions in the rectum.

Very truly yours,
RICHARD B. CATTELL.

RECENT DEATHS

SLACK — DR. FRANCIS H. SLACK of 13 Reedsdale Street, Allston, died May 5, 1932. He was born in West Abington, January 7, 1875, the son of Josiah B. and Jane B. (Hattie) Slack. He graduated from the Tufts College Medical School in 1898 and married Grace G. Brown of Roxbury, Massachusetts, in 1901. Dr. Slack served as interne at the State Hospital, Taunton, 1898-1901. He was attending physician to the Boston Dispensary, 1904. He was bacteriologist in the Boston Health Department and assistant director of the Boston Health Department Laboratory. He also served as Professor of Bacteriology, Kansas State Agricultural College 1910-1911. Dr. Slack was Secretary of the Boston Health Department 1911-1914. He served as instructor in the Biological Department of the Massachusetts Institute of Technology for many years and was assistant pathologist at the Boston Dispensary from 1923 until his death. Dr. Slack was a member of the Massachusetts Medical Society, the American Medical Association, the Massachusetts Association of Boards of Health, the Society of American Bacteriologists and the American Public Health Association. During the late war he was lieutenant and captain of the Massachusetts State Guard. He was the author of numerous articles on bacteriology and on laboratory work in connection with the examinations of milk.

MERRITT—DR. VICTOR SULVIRO MERRITT, a retired member of the Massachusetts Medical Society, died in Springfield, Massachusetts, May 2, 1932, at the age of 69 years. He joined the Massachusetts Medical Society in 1900 and had practiced in Springfield since 1909.

He was born in Boston and took his M.D. degree from the Medico-Chirurgical College of Philadelphia, Pennsylvania, in 1897.

His wife Mellie (Small) Merritt, a daughter Mrs. Carl R. Lane of West Hartford, and three grandchildren survive him. He was a member of Emmanuel Church, the Roswell Lee Lodge of Masons and the Hampden County Medical Association.

NOTICES

RADIO HEALTH MESSAGES

MAY-JUNE, 1932

Sponsored by the Public Education Committee of the Massachusetts Medical Society and the Massachusetts Department of Public Health.

Courtesy WBZ. Tuesdays, 4:20 P.M.

May

17 The Deaf Child
24 Medical Care
31 Growth and Development

June

7 Prenatal and Maternity Service
14 New Findings in Oral Hygiene
21 Community Public Health
28 Communicable Diseases

STATE HOUSE BROADCAST

Sponsored by the Massachusetts Department of Public Health.

Courtesy WEEI. Fridays, 12:30 P.M.

Health matters of public interest discussed by the Division Directors of the Department.

RADIO HEALTH FORUM

Queries from the public are answered under the sponsorship of the Department of Public Health.

Courtesy WEEI. Fridays, 4:50 P.M.

Questions on Health and Prevention of Disease may be sent to Radio Health Forum, State Department of Public Health, State House, Boston.

DIRECTORY OF QUALIFIED OCCUPATIONAL THERAPISTS

The American Occupational Therapy Association is about to issue its first Annual Directory of Qualified Occupational Therapists, which will include the names of those who applied and were found qualified for admission to the National Register established by the Association early in 1931.

It is interesting to recall that the late Dr. Thomas W. Salmon, who was keenly interested in treatment by occupations—not only for persons suffering from mental and nervous disorders, but for many other types of illness and disability — suggested some years ago that the Association establish a register or directory of properly qualified workers, "to protect hospitals and related institutions from unqualified persons posing as Occupational Therapists".

Speaking not only for himself, but for other physicians interested in occupational treatment, Dr. Salmon also said, "We want a directory to which we could refer for information about a candidate for a position in occupational therapy with as much assurance as we refer to the directory of the American Medical Association for information about a doctor."

Acting on the advice of leading medical and nursing organizations, the Association decided, as a first step toward the establishment of a national directory, to set up minimum standards of training, which were first promulgated in 1923. The standards were raised in 1926 and again in 1929, and the latest standards are now being met in the leading training schools recommended by the Association.

It is gratifying to record that graduates of some of the leading occupational therapy training schools in the United States are holding leading positions in other countries; also that several students from abroad are at present taking training in our schools. Copies of the new directory may be secured from the Association at 175 Fifth Avenue, New York, N. Y.

REMOVAL

Harold F. Miller, M.D., announces the removal of his office to 28 Pleasant Street (Suite 508), Worcester, Massachusetts.

ANNOUNCEMENT

N. S. Scarcello, M.D., announces the opening of his office at the Professional Building, 27 Elm Street, Room 514, Worcester, Massachusetts. Phones: office dial 5-0616, residence 3-4429.

REPORTS AND NOTICES OF MEETINGS

THE MASSACHUSETTS TUBERCULOSIS LEAGUE

One hundred representatives of the twenty-eight Affiliated Organizations of the Massachusetts Tuberculosis League were present at the Annual Meeting held at the Boston Y. W. C. A. on Thursday, April 28. Dr. Frederick T. Lord, President, who was reëlected for the fourth year, presided.

Dr. Lord gave his annual Presidential address.

Frank Kiernan, Executive Secretary, gave a report of the progress of the League and its affiliated organizations during the year.

Miss Jean V. Latimer, Educational Secretary, spoke on Child Health Education, the development of better knowledge of tuberculosis on the part of both adults and children and what the League is trying to do to carry out in a practical way present developments in the educational field in tuberculosis work.

The papers given at the Annual Meeting will appear in subsequent issues of this *Journal*.

At the business meeting of the League Corporation at which Dr. Walter P. Bowers presided, the annual report of the Treasurer and the Auditors was presented and accepted.

Dr. Nathaniel K. Wood, Chairman of the Nominating Committee, presented the list of nominees prepared by his Committee for consideration at the meeting. All the nominees were unanimously elected.

The League had a pleasant surprise in an unexpected visit from Dr. Kendall Emerson, Managing Director of the National Tuberculosis Association, who made an address at the close of the afternoon's proceedings.

Following the business meeting of the League, a special Health Education Meeting was held at which reports were made on the League's experiments in health education in conjunction with the school authorities in Lynn and Danvers. Professor C. E. Turner of Massachusetts Institute of Technology presided. The speakers were Mr. Ernest Stephens, Deputy Superintendent of Schools, Lynn; Mr. Ivan G. Smith, Superintendent of Schools, Danvers; Miss Mary Slade, representing the student body of Richmond Junior High School, Danvers; Mr. Walter Fish, representing the student body of Lynn English High School; Miss Rae E. Kaufer, Educational Secretary, Essex County Health Association; and Miss Ellen Lytle, Educational Research Assistant of the Massachusetts Tuberculosis League.

The following officers were elected by the League for the year 1932-1933:

Honorary President: Dr. Edward O. Otis.

President: Dr. Frederick T. Lord.

Honorary Vice-Presidents: Dr. George H. Bigelow, Rt. Rev. William Lawrence, D.D., Rabbi Harry Levi, His Eminence William Cardinal O'Connell.

Vice-President: Dr. Francis P. Denny.

Treasurer: Mr. Arthur Drinkwater.

Assistant Treasurer: Mr. Romney Spring.

Clerk of the Corporation: Mr. Frank Kiernan.

Members of Executive Committee: Dr. Alton S. Pope, term to expire April, 1934; Dr. Nahum R. Pillsbury, term to expire April, 1935; Rev. Walter F. Greenman, term to expire April, 1935.

Directors-at-Large: Dr. George H. Bigelow, Milton; Mr. Frederic Bailey, North Scituate; Dr. Walter P. Bowers, Clinton; Dr. Robert P. Carpenter, North Adams; Miss Josephine B. Colt, Boston; Dr

Francis P. Denny, Brookline; Mr. Arthur Drinkwater, Cambridge; Dr. C. Benjamin Fuller, Waltham; Rev. Walter F. Greenman, West Newton; Mr. William B. Geoghegan, New Bedford; Mr. William N. Goodell, Lowell; Mrs. John D. Henry, Boston; Dr. William O. Hewitt, Attleboro; Professor Murray P. Horwood, Newton Centre; Dr. Roger I. Lee, Boston; Dr. Frederick T. Lord, Boston; Dr. Richard P. MacKnight, New Bedford; Mr. David Moxon, Framingham; Dr. Edward O. Otis, New Hampshire; Dr. Alton S. Pope, Newtonville; Dr. Sumner H. Remick, Waltham; Mr. John Ritchie, Malden; Mr. Thornton K. Ware, Fitchburg; Miss Margaret Weir, Beverly; Rev. C. P. Wellman, Woburn.

Representative Directors: Miss Mary Mortimer, Barnstable; Dr. Floyd B. Smith, Pittsfield; Dr. John B. Hawes, 2d, Boston; Dr. Donald S. King, Boston; Dr. Nathaniel K. Wood, Boston; Mr. Alexander Wheeler, Boston; Mrs. Reginald Heber White, Jamaica Plain; Mr. George H. Gilbert, Segreganset; Mrs. Mabel Greeley Smith, Cambridge; Mrs. E. Frank Guild, Chelsea; Dr. Olin S. Pettingill, Middleton; Mrs. H. G. Hamann, Swampscott; Dr. John H. Lindsey, Fall River; Mrs. A. L. Johnson, Orange; Mr. Clifton H. Hobson Palmer; Mr. Walter S. Barr, West Springfield; Mr. Clarence E. Hodgkins, Northampton; Dr. I. J. Clarke, Haverhill; Dr. S. L. Skvirsky, Holyoke; Mrs. Frances B. Mowry, Salem Center, New Hampshire; Mr. Charles H. Hobson, Lowell; Mrs. Carolyn M. Engler, Lynn; Mrs. F. Anna Green, Malden; Mrs. Marion Sevrens, Nantucket; Dr. John M. Wise, New Bedford; Mrs. Allan R. Shepard, Newburyport; Dr. Cecil Clark, Newtonville; Dr. Nahum R. Pillsbury, South Braintree; Mrs. William C. Rogers, Cohasset; Mr. Frank W. Lesure, Fitchburg; Mrs. B. Milo Burke, Brockton; Dr. J. Holbrook Shaw, Plymouth; Dr. J. Frank Donaldson, Salem; Dr. Charles W. McPherson, Medford; Mr. James J. Quinn, Winchester; Rev. J. F. McGillicuddy, North Brookfield; Mrs. Chandler Bullock, Worcester; Dr. Roy J. Ward, Worcester; Dr. Arthur K. Stone, Framingham Center.

THE HARVARD MEDICAL SOCIETY

A meeting of the Harvard Medical Society was held in the Peter Bent Brigham Hospital on Tuesday evening, April 26. Dr. Harvey Cushing presided.

Dr. Bronson Ray presented two neurosurgical cases. A fourteen year old girl was sent to the hospital because her physician had noted early papilledema. The family and past history was irrelevant. Four years previously she began to have severe headaches, often associated with vomiting. These occurred regularly every ten days and in the interim she seemed well. The only other symptom referable to the central nervous system was a throbbing sensation in the right side of the head and especially in the right ear. There was a bruit over this area on auscultation and there was a little nystagmus in all directions. Otherwise examination was negative. A ventriculogram showed a dilated left ventricle, a small amount of air in the third ventricle, and no air in the right ventricle, changes suggesting a third ventricle tumor.

On March 12 a right parietal bone flap was turned down and a subtemporal decompression done as a preliminary step to a subsequent transcortical approach to the third ventricle. After eighteen days the second stage was done and a tumor was found bulging into the medial and lower portion of the right ventricle. Immediate microscopic examination showed that this was a fibrillary astrocytoma and it was almost completely removed. Her convalescence has been uneventful and she is now ready for discharge.

The second patient was a thirty-eight year old man who had had recurrent headaches for a period of four years. Soon after the onset of symptoms his physician made a diagnosis of sinusitis and operated upon him but the headaches continued as before. A year ago they increased in frequency and severity and six months ago he became somewhat irritable and drowsy. At this time examination, including lumbar puncture and encephalogram, was negative and a diagnosis of encephalitis was made. He then improved symptomatically until ten days before entry when the symptoms returned with increased severity. A ventriculogram showed symmetrically dilated lateral ventricles and a poorly visualized third ventricle. Consequently, a preliminary parietal bone flap was turned and nine days later the region of the third ventricle was explored. A cystic tumor was found blocking the third ventricle. After aspirating the cyst Dr. Cushing was able to remove the wall and to coagulate a papillary tumor which was attached to one portion of the wall.

Soon after operation the patient began to show symptoms due to stimulation of the hypothalamic nuclei. These were an elevated and irregular pulse, polyuria, polydipsia, flushing of the face and neck, and marked sweating. There was no elevation of temperature. After a few days these symptoms began to subside and their complete disappearance is anticipated.

Dr. Philip Bard, Assistant Professor of Physiology, Harvard Medical School, spoke on "Neural Mechanisms for the Emotions." When Dr. Cannon demonstrated that sham rage was due to a diffuse sympathetico-adrenal discharge it implied that there was some center in the central nervous system responsible for the reaction. Several investigators showed that sham rage occurred in decorticate animals but that it was absent in decerebrate animals. Dr. Bard sectioned the brains of cats at various levels and found that the reaction was retained whenever the cut was above the posterior hypothalamus and that it disappeared whenever this region was destroyed, indicating that the center for rage is located in this area.

Dr. Bard has successfully prepared two chronic decorticate cats. One lived for over two years but was finally sacrificed, and the other is now alive six months after the operation. Motion pictures of the first animal were shown and the second animal was

demonstrated. Stimulation of either cat caused an exhibition of rage. The first animal also exhibited fear when loud and unusual noises were made, indicating that fear may be a subcortical response. The second animal has not shown this reaction. Dr. Bard has not been able to obtain any response that could be interpreted as pleasure in either animal.

In order definitely to prove that the hypothalamic region is responsible for sham rage Dr. Bard wished to prepare chronic hypothalamic animals, but none of his cats lived for longer than ten days. During this time they all showed marked and continuous activity and exhibited rage on the slightest stimulation. Dr. Bard has, however, been able to prepare chronic unilateral hypothalamic animals in which the entire brain above the posterior hypothalamus on one side has been removed. His first cat has now lived sixteen months in this condition; the most recent one was operated upon a month ago. He showed motion pictures of the former and demonstrated the latter. Slight stimulation of the homolateral side is followed by marked rage while stimulation of the contralateral side has no effect. That the rage is not due to pain is evident as the cats freely rub the homolateral side of their bodies against various objects. This is the first time that this observation has been made and Dr. Bard is not prepared to offer an explanation.

STAFF MEETING OF THE GREATER BOSTON BICKUR HOSPITAL

The regular monthly meeting of the Staff of the Greater Boston Bickur Hospital was held in the Nurses' Home on Thursday, April 28, at 8:15 P.M. Dr. M. Gerstein presided. The speaker of the evening was Dr. Max Davis, Instructor in Obstetrics, Boston University Medical School, and member of the Obstetrical and Gynecological Staff of the Massachusetts Memorial Hospitals. He spoke on the Aschheim-Zondek test for pregnancy.

The Aschheim-Zondek test has become generally recognized as a most valuable reaction for the determination of early pregnancy. It is based upon the recent work recognizing the importance of the relationship of the anterior lobe of the pituitary and the ovary in the physiology of reproduction, since it determines the presence of the pituitary hormone excreted in the urine during pregnancy. The original Aschheim-Zondek technique used mice as test animals, five mice being injected with the first morning urine and their ovaries being examined 100 hours after the first injection. A positive reaction was indicated by the presence of corpora lutea and corpora hemorrhagica in the ovaries of the mice. Various modifications of this technique have been suggested, but the best is that of Friedman who recommended the use of rabbits as the test animals. The method now used is a single injection of 10 to 12 cc. of urine into the marginal ear vein of the rabbit, the reaction being read at the end of 24 to 48 hours. The test has an accuracy of about 98 per cent or more.

The test is very valuable in the differential diagnosis of pregnancy and various types of pelvic neoplasms, as well as in amenorrheas of various origins. It is an important aid in confirming a diagnosis of ectopic pregnancy. It can be of great assistance in following up cases of suspected hydatidiform mole and chorionepithelioma in which the test is positive. The test is also positive in tumors of the anterior lobe of the pituitary and in about 80 per cent of cases of teratoma of the testicle. There is some evidence to indicate that death of the fetus may perhaps be diagnosed by this test.

THE CLINICAL MEETING OF THE STAFF OF THE MASSACHUSETTS GENERAL HOSPITAL

The regular clinical meeting of the staff of the Massachusetts General Hospital was held in the Moseley amphitheatre on April 14. Dr. G. W. Holmes presided.

A case was presented by Drs. Baird and Cope. A thirteen year old girl was sent to the hospital for metabolic studies. She had had polyuria, frequency, and nocturia for eight years. She had drunk fourteen glasses of water a day all her life. Her present illness began two years ago. She had transient swelling of the eyelids at this time. She also began to develop slight limp and noticed that her left knee was turning in. X-ray showed a solitary cyst at the lower end of the femur; the plate, according to Dr. Holmes, is consistent with enchondroma. The report on the biopsy specimen taken at operation was lost.

Six months later there was some return of the deformity, but she remained nearly well until six months ago when the right knee began to turn in just as the left had done. X-rays were taken and the patient was referred to the Massachusetts General Hospital.

On physical examination she showed pallor of the skin, negative eye-grounds, no palpable mass in the neck, and a blood pressure of 150/80. The chest seemed more flexible than normal, and there was a valgus deformity of the right knee. The wrists could be hyperextended. X-rays showed cystic changes and osteoporosis of the pelvis. The epiphyses were broadened and flattened. The upper and lower portions of each vertebra were denser than normal. These x-ray findings suggested hyperparathyroidism from the pelvic picture, renal rickets from that of the epiphyses, and simulated marble bones in that of the spine.

The blood calcium was 12.5. The blood phosphorus was always within normal limits. The urinary excretion of calcium and phosphorus was entirely normal. The blood NPN ranged from 53-63; the carbon dioxide combining power from 35-45; while the PSP test showed 10% excretion. The specific gravity of the urine ranged from 1.002-1.005, with a slight trace of albumin. The Hinton and Bence-Jones protein tests were negative.

The diagnosis rested between hyperparathyroidism and renal rickets. Exploration was decided upon.

At operation a parathyroid tumor about 2 cm. in diameter was found and removed.

Since operation her blood calcium has dropped to a low point of 6.6 on the fifth day. She now is in mild tetany.

Dr. Bauer stated that this is probably the third case of hyperparathyroidism that has been observed at this age. She is also interesting because of the definite kidney lesion. It may be secondary to calcium deposition in the kidney tissue, or may represent a distinct nephritis. Probably the phosphorus threshold has been definitely increased because of the kidney lesion. This would also explain the normal calcium and phosphorus excretion. Although most patients after parathyroidectomy exhibit tetany when the blood calcium falls to 8.5, she has only mild tetanic symptoms when it is 6.6. This may be due to her high blood phosphorus. The abnormal calcification of the cartilages in the epiphyses may result from the high calcium level of the blood.

Dr. Aub said that the epiphyses should be expected to become abnormal in this disease since calcium is withdrawn from them as well as from the trabeculae. He suggested that the kidney function may improve after recovery from the operation. The tetany probably will continue for about two weeks until the other parathyroids again begin to function.

The address of the evening was given by Dr. E. C. Andrus, Associate Professor of Medicine and Associate Physician of the Johns Hopkins Hospital, on "Observations Upon the Heart in Hyperthyroidism, and in Thyroxinized Animals." He considered some clinical data concerning patients with hyperthyroidism, and experiments on animals to which varying doses of thyroxin had been given.

The heart rate in hyperthyroidism is unusually labile. The circulation appears to be laboring under a strain such that any additional load may cause distressing symptoms. Tachycardia engenders palpitation in such cases. The circulatory minute volume is augmented. If the pulse rate is slow, the pulse pressure is frequently high. In many instances the cardiac reserve is diminished.

Several theories have been proposed to account for these abnormalities. It was first supposed that the pressure of the enlarged thyroid gland upon the trachea and the nerves and vessels in the neck induced the symptoms of "goiter heart". But the most conspicuous cardiac manifestations may accompany hyperthyroidism associated with a thyroid gland normal in size. Later it was assumed that these symptoms were due to actual myocardial lesions. However, the rapid subsidence of the cardiac manifestations following relief of hyperthyroidism would appear to refute this theory. Finally, attention has been particularly directed to the excessive load thrown upon the heart by the circulatory requirements incident to the augmented metabolism of the entire organism.

Dr. Andrus reported a study of 200 cases of hyperthyroidism before and after subtotal thyroidectomy. Myocardial insufficiency was uncommon in this series among the patients under 40 years of age. When present it was almost invariably associated with rheumatic or, more rarely, syphilitic heart disease. Cardiac failure was most common at any age in association with other factors which would tend to diminish the cardiac reserve.

At this point Dr. Andrus referred to the observations of Drs. Rake and McEachern who made a careful pathological study of the hearts of 27 patients who had died of hyperthyroidism. These were controlled by the study of 150 hearts from patients of the same age groups who had died without evidence of cardiac or thyroid disease. No myocardial lesions were observed in the hearts of hyperthyroid patients which were considered specifically characteristic of this disease. It was impossible to correlate the severity of the disease with the degree of myocardial damage.

Drs. Rake and McEachern also administered thyroxine to animals and were unable to demonstrate any characteristic lesions in the hearts of these animals.

Dr. Andrus further reported that all attempts to demonstrate any effect of thyroxine upon isolated hearts in vitro had been without result. He referred to the observations of Markowitz and Yater who have reported the production of a more rapid spontaneous rhythm in the explanted heart of the embryo chick upon exposure to thyroxine. It was pointed out that this effect was obtained only after a considerable latent period and by the use of relatively enormous doses of thyroxine.

If thyroxine is injected into a normal rabbit its action does not become apparent until 12-36 hours have elapsed. The animal then becomes irritable, responds in an exaggerated manner to stimuli, displays increased appetite and thirst and rapidly loses weight. The cardiac rate is increased even at rest. Continued doses cause emaciation and death from exhaustion.

The hearts from such animals were removed at the height of the thyroxine effect. It was observed that both the perfused hearts and the isolated auricles of such animals continued to beat at an abnormally rapid rate for hours after removal. It was considered possible that this effect might be the result of a persistent stimulation of the accelerator endings in the myocardium. The fact that the tachycardia following large doses of atropine and adrenaline fails to persist in the isolated heart casts doubt upon this conclusion. It seems more probable therefore that thyroxine exerts its effect by augmenting the metabolism of the myocardial tissue. Further experiments indicate that this is apparently the case. The oxygen consumption of the isolated auricles of thyroxinized guinea-pigs is considerably greater than that of normal controls. Moreover, the glycogen reserve is depleted in the ventricle of the thyroxinized animal. The same condition obtains in the skeletal muscle.

In summary Dr. Andrus stated that it appears

that the cardiac tissue shares in the metabolic upheaval characteristic of the state of hyperthyroidism. In addition, there falls upon the myocardium the burden of the increased circulatory demands of the entire organism, the metabolism of which is augmented. These two factors combine to bring to the fore the cardiac manifestations of hyperthyroidism. In individuals whose circulatory reserve has been diminished by age or by organic cardiac disease, these may result in cardiac failure. Presumably this may develop when the load thrown upon the myocardium exceeds or approaches the limits of its own metabolism.

The discussion was opened by Dr. Paul D. White. He stated that cardiac failure in hyperthyroidism depends on the time the patient has shown toxic symptoms, and the presence of other cardiac lesions. The incidence of this type of cardiac failure has become definitely less in the last decade.

Dr. Hurxthal has concluded from clinical data that hyperthyroidism affects the heart just as it does the other muscles. He found that cases with fibrillation have the lowest blood cholesterol, with the exception of the patients in crisis. Blood cholesterol is not so low in toxic adenomatous goitre as in hyperthyroidism. Electrocardiographic studies of chick hearts perfused with thyroxine, carried out in the Palmer Memorial Hospital, have shown no variation from normal.

Dr. Jacob Lerman said that the symptoms do not always indicate the severity of the disease. Thus males have more severe disease, as measured by the BMR, while females complain twice as much.

Dr. William Salter pointed out the fact that the site of action of thyroxine is still undetermined. However, Scharles has found evidence of increased concentration of glycogen-splitting enzymes in tissues of thyrotoxic animals. Meyer and Aub have found that in tumor bearing animals injection of thyroxine causes increased oxygen consumption by the liver, decreased consumption by the tumor.

Dr. Mallory stated that he has been unable to discover any abnormality in thyrotoxic hearts.

In closing, Dr. Andrus said that no findings were inconsistent with the conclusion that the action of thyroxine is exerted on the cells, especially on the intracellular enzymes which break down glycogen.

THE MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH

The spring meeting of the Massachusetts Association of Boards of Health, held in Boston on April 28, was in effect a symposium of departmental cost-cutting as practiced by Fall River and Pittsfield. Four speakers were on the program.

Dr. Ernest M. Morris, Health Commissioner of Fall River, spoke of what has been done in his city. The "normal" appropriation for the Health Department may be stated as $155,000. The first cut reduced the budget for the present year to $106,000, and more recent eliminations have resulted in a final figure of $95,000. The details of these economies were sketched by Dr. Morris, and they included, unnecessarily large salaries, and in this group were the members of the board of health, who are now serving without remuneration. A school nurse resigned, and a physician died. These places have not been filled. The inspector of plumbing suffered a reduction in salary, and the inspector of slaughtering was discharged. There is no slaughtering in Fall River, but to comply with the law, the inspector of plumbing has been given the title of inspector of slaughtering. The children's health and welfare division was discontinued, when private agencies gave the assurance that the work of this department would be carried on by them. The school dental clinic has been given up, and this Dr. Morris characterized as "a catastrophe". There is improved functioning with economy in dealing with diphtheria, more toxin-antitoxin being administered to its contacts, and more attention being given to the problems connected with the prevention of typhoid fever.

Dr. Morris noted that tuberculosis is likely to increase with a lower standard in the nutrition of the people, and this matter must be closely watched with proper technical examinations. The city spends about one-sixth of its appropriation for the division of tuberculosis, and this does not include costs of state sanatoria. School hygiene must be kept up, and also maternal and baby sanitary measures.

Pasteurization of milk is a necessary item, of which the board of health must exercise supervision and control. The collection of garbage is not always a health measure, but is usually cared for by the health department. In Fall River the cost is about $23,000 a year. In the matter of examination of food handlers, this was undertaken by two restaurants. One of these was burned and the other was not successful in business, so that at present this procedure is inactive, but it is hoped that interest in it will again become active.

Dr. Morris emphasized the necessity of maintaining a "high level" laboratory service. In the city it has been possible to improve the venereal clinic. One matter which has been quite important in the city's economies is the concentration of all supplies for the city in one purchasing department.

Dr. Willys M. Monroe, Health Officer of Pittsfield, Mass., sketched in a somewhat similar manner the economies which are to reduce the "normal" expenditures of the department by about thirty per cent, this being the figure set by the Mayor. In the first place politics has not been permitted to enter into any of the work. There have been no discharges of employees, but dental work has been stopped, and costs of general administration and hospital expenses have been cut. Work which has not been changed in amount and quality includes vaccination, diphtheria immunization, care of communicable diseases, prenatal and infant clinics, school work and general food inspection. The inspection of milk has been cut. In administration there will be nothing new in equipment this year, and the allowance for

automobiles has been reduced. This amounts in effect to a reduction in pay. A reduction has been made in hospital costs, and in the care of children, a movement with which Dr. Monroe is not quite in sympathy, believing this may jeopardize future health. It would, however, be more unfortunate to discharge trained assistants. In certain respects, health administration has reverted to the standards of 1921. The progress in health work in certain lines has been most satisfactory in Pittsfield, the tuberculosis death rate in 1911 being about 211 per 100,000 of population and now numbering about 40, while the infant mortality in the same time has dropped from 200 per thousand births to 50.

Dr. D. L. Richardson, Superintendent of Health of Providence, who was one of a survey committee of the Fall River situation, gave many details of the elimination of competition and consequent economy in the hospital administration of the city, and Dr. William F. MacKnight of Fall River discussed the former situation and the economies effected in an extemporaneous, but interesting, address.

THE WILLIAM HARVEY SOCIETY

The William Harvey Society met in the amphitheatre of the Beth Israel Hospital on April 8. The address of the evening was given by Dr. George W. Crile, Director of the Cleveland Clinic, on "Biologic Indications for and End-Results of Denervation of the Adrenal Glands." Dr. Horace Binney, Professor of Surgery at Tufts Medical School, presided.

In 1910 Dr. Crile, in his Ether Day Address in Boston, stressed the importance of phylogenetic phenomena in the explanation of pathology. He believed that disease as well as health should be investigated from the evolutionary standpoint. The importance of this observation has been attested by studies made since then.

Thus civilized man is heir to many diseases that are not observed in lower man, the insane, or lower animals. Among these diseases may be listed exophthalmic goitre, peptic ulcer, neurocirculatory asthenia, and, perhaps, diabetes. Dr. Crile's address was concerned with the interpretation of these diseases.

Man differs from lower animals in that the frontal lobe of the brain is much more developed, the hands are better trained, and the thyroid is larger. Thus in man the thyroid is relatively larger than the adrenals compared with the relative weights of the same organs in animals.

The importance of the adrenal secretion in animals which requires continual outbursts of energy for survival has been pointed out by Dr. Cannon. Emotions of fear and hate cause an integration of the individual to cope with the antagonist. Man no longer requires these emotional states for survival, but they persist nevertheless and, when too strong, furnish the basis of disease.

Dr. Crile believes that the brain may send stimuli to the adrenal. The largest ganglion cells in the body are found in this gland, while about thirty nerves go out from it. He makes the assumption that the adrenal is the "power-house of the sympathetic".

If the spinal pathways to the adrenal were interrupted, the intensity of emotions should be greatly diminished. Clinical evidence confirms this statement. Thus patients with high transections of the cord characteristically are very calm. Also if a patient is carefully given local or spinal anesthesia without disturbing him, he will be noticeably free of emotion during the course of the operation and will often fall asleep during its course.

Emotional excitement leads to decreased activity of the stomach, diminished motility and diminished gastric secretion followed by a later increased acidity with increased mobilization of glucose and increased thyroid activity. It has been said that hyperthyroidism is in reality hyperadrenalism. The thyroid's function is dependent on external stimuli. Thus removal of the ganglia giving rise to the sympathetic nerves supplying the thyroid has occasionally been used as a cure for hyperthyroidism.

In one case of extreme hyperthyroidism one adrenal was resected. It was found to be extremely vascular, adherent and soft, indicating hyperfunction. The results were so satisfactory that denervation of the adrenals, or removal of one, has been done in other cases.

Thyroid crises may be produced by pain, emotion, foreign proteins (such as originate from an attack of tonsillitis, or wound infection), inhalation anesthetics, asphyxia, and adrenalin. All of these factors, except the last, obviously cause an increased output of adrenalin.

Perhaps diabetes can be relieved by resection of the adrenal nerves. For the same type of patients who have exophthalmic goitre have diabetes.

The physician, in treating a patient suffering from any of this group of diseases, must first carefully explain the rationale of treatment to his patient. This must be done in a convincing way. Then, in case of hyperthyroidism, subtotal thyroidectomy should be done. Enough of the gland should be removed to produce hypothyroidism for several months. In case of recurrence, the adrenal gland can be denervated. Patients with peptic ulcer often have surprising relief of pain after the adrenals are denervated. After this operation, which has been done in 34 cases in which ulcer has recurred after gastro-enterostomy, patients are much relieved and respond better to dietary treatment. Neurocirculatory asthenia can be entirely relieved by this operation. However, it is necessary to exclude all patients with psychoses, since operation will do them no good. Six patients with diabetes have been subjected to this operation. It is too early to tell anything about the results, but the blood sugar appears to be falling.

In all, the operation has been done 152 times. There has been only one mortality directly ascribable to the operation.

NEW ENGLAND SOCIETY OF PSYCHIATRY

ANNUAL SPRING MEETING

This meeting will be held May 17, 1932, at the Taunton State Hospital, Taunton, Massachusetts.

PROGRAM

Business Meeting, 12 o'clock:

Election of Officers.

Discussion of Amendment of the by-laws, Section 5—Officers: Change to read "The President and Vice-President shall be elected annually, and—"

Luncheon, 12:30 o'clock:

Speaker—Dr. A. Warren Stearns, "Experiences in Treatment of Crime in Massachusetts."

HARLAN L. PAINE, M.D., *Secretary-Treasurer.*
North Grafton, Massachusetts.

MASSACHUSETTS GENERAL HOSPITAL

A Clinical Meeting of the Staff of the Massachusetts General Hospital will be held in the Moseley Memorial Building on Thursday, May 19, 1932, at 8:15 P.M.

PROGRAM

1. Presentation of Cases.
2. "The Use of Arsenic in the Treatment of Diseases of the Blood." Dr. Claude E. Forkner, Francis Weld Peabody Fellow in Medicine and Assistant Physician, Thorndike Memorial Laboratory, Boston City Hospital.

   Discussion will be opened by Dr. George R. Minot, Dr. Francis Hunter and Dr. Henry Jackson.

Physicians, Medical Students and Nurses are cordially invited to attend.

COMMITTEE ON HOSPITAL MEETINGS.

BOSTON CITY HOSPITAL

The next Staff Clinical Meeting Thursday, May 19, 1932, at 8:15 P.M., Cheever Amphitheatre.

Some Results of Treatment of Arthritis with Amidoxyl. Dr. John A. Foley.

Case of Coronary Thrombosis with Post-Mortem Findings. Dr. William T. O'Halloran.

Cases of Hyperthyroidism. Dr. Norman A. Welch.

Discussion of Treatment of Cardiac Cases with Intravenous Glucose Solution. Dr. Bernard I. Goldberg.

Discussion.

Doctors and Medical Students cordially invited.

COMMITTEE ON HOSPITAL CLINICS.

NEW ENGLAND HOSPITAL FOR WOMEN AND CHILDREN

The regular clinical conference of the New England Hospital for Women and Children will be held at the hospital, Dimock Street, Roxbury, on Thursday, May 19, at 8 P.M. A paper will be read by Florence Belyea Hopkins, M.D., D.M.D., on "How Dentistry Can Aid in Diagnosis and Treatment," and the following cases will be presented and discussed: Bronchial Pneumonia; Renal Tuberculosis; Gastric Carcinoma.

ALICE H. BIGELOW, M.D., *Secretary.*

THE NEW ENGLAND ROENTGEN RAY SOCIETY

The Annual Meeting will be held at The Boston Art Club, Boston, Mass., Friday night, May 20, 1932.

A dinner will be served at 6:45. (Also at the Boston Art Club.)

SCIENTIFIC SESSION

"The Value of the Meniscus Sign in the Diagnosis of Carcinoma of the Stomach." Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minnesota.

The discussion will be opened by Dr. G. W. Holmes, Boston, Mass.

T. R. HEALY, M.D., *Secretary.*
370 Marlborough Street, Boston, Mass.

NEW ENGLAND PHYSICAL THERAPY SOCIETY

The annual meeting of the New England Physical Therapy Society will be held at the Boston Square and Compass Club, 448 Beacon Street, on the evening of Wednesday, May 18, at 8 o'clock.

"Colonic Irrigation" by Dr. Charles E. Thompson, Superintendent, Gardner State Colony. Discussion to be opened by Dr. Arthur H. Ring.

Preceding the regular meeting the council will meet at six o'clock and dinner will be served at six-thirty.

ARTHUR H. RING, M.D., *Secretary.*

SOCIETY MEETINGS
CONGRESSES AND CONFERENCES

May 17—New England Society of Psychiatry. See notice elsewhere on this page.

May 17—The South End Medical Club. See page 973, issue of May 5.

May 18—New England Physical Therapy Society. See notice above.

May 18—The New England Heart Association. See page 973, issue of May 5.

May 19—Massachusetts General Hospital. See notice elsewhere on this page.

May 19—Boston City Hospital. See notice elsewhere on this page.

May 19—New England Hospital for Women and Children. See notice elsewhere on this page.

May 20—The New England Roentgen Ray Society. See notice above.

June 6, 7, 8, and 9—National Tuberculosis Association. See page 598, issue of March 17.

June 8, 9, 10—Massachusetts Medical Society, Hotel Statler, Boston.

June 9—Harvard Medical School Alumni Association. See page 997.

June 21-24—Catholic Hospital Association. See page 369, issue of February 18.

July 10 - August 12—The Second Intensive European Summer Course in Surgery, Gynecology and Obstetrics. See page 714, issue of March 31.

Autumn—International Postgraduate Courses in Berlin. See page 1169, issue of December 10.

September 19-22 — International Congress of Biliary Lithiasis. See notice on page 427, issue of February 25.

October 24-27 — American Public Health Association. See notice on page 1321, issue of December 31.

October 24-28—Inter-state Postgraduate Medical Association of North America. See page 39, issue of January 7.

BERKSHIRE DISTRICT MEDICAL SOCIETY

May 13—See page 973, issue of May 5.

BOOK REVIEWS

Foods in Health and Disease. By LULU G. GRAVES. The Macmillan Co., New York City. Octavo, pp. 363, price $3.50.

This book by a former professor of home economics at Cornell as well as ex-chief dietitian of various large hospitals, describes the source, composition, and nutritive value of most edible substances and beverages, very completely. An account also is given of the food elements, the functions of food, and the factors that influence nutrition. One chapter is devoted to the accessory substances and another to the preservation of foods. In the second section, the therapeutic use of food in deficiency and metabolic diseases is briefly described. Finally, the appendix contains tables of the vitamin content and the fuel values of foods.

The style used in writing is brief and to the point, and well adapted to a reference book. The part devoted to foods in disease is somewhat limited; and merely a few sentences are devoted to the important subject of the acid-ash and alkaline-ash value of foods. Many illustrations of different vegetables, fruits, and the cuts of meat amplify the text. A complete bibliography accompanies each chapter; and there is also a complete index of authors and subjects. The book should be valuable to dietitians, medical students, and some of the laity.

Fractures of the Jaws. By ROBERT H. IVY and LAWRENCE CURTIS. Published by Lea & Febiger. Price $4.50.

Fracture of the jaws is another one of those subjects that belongs both to medicine and surgery on the one hand and to dentistry on the other; hence in their preface, the authors have expressed the hope "that this presentation would appeal to the surgeon, specialist and dentist".

The volume contains 178 pages of well-classified material, and for purposes of discussion the subject matter is divided into eight chapters including one on anatomical considerations, on roentgenographic technique, and on dietary management in jaw fracture cases. Throughout the book, the methods advocated are those which, in the hands of the authors, have proved the most successful. Their discussions are good, but one might wish that their treatment of fractures of the upper jaw and malar bones had been fuller. Thus, the book becomes useful to the general surgeon and the student by providing serviceable information on simple fractures, but it falls short from the standpoint of the specialist who desires references on complicated fractures of the facial bones.

The consideration of the methods of immobilization appears to emphasize interdental wiring and to minimize the importance of the dental splint. Interdental wiring, of course, as a simple method is adaptable to many fractures of the mandible, but one cannot deny that wiring the upper and lower jaws together for weeks is a source of great discomfort to the patient. Furthermore, the authors' arguments against using the splint are not convincing. For certain types of fractures, especially those with sound teeth on each segment of the mandible, dental splints of simple design can be made by a competent dental surgeon and cemented over the teeth, thereby allowing the patient to retain function of the jaw. Such a method should not be cast aside in a discussion of this sort because of lack of experience on the part of the dental surgeon. Special splints with bands around selected teeth, not mentioned in the book, can be very easily and quickly prepared by the experienced dental surgeon, and provide an extremely satisfactory means for handling cases—not least from the patient's point of view.

On the whole, this book is well illustrated and clearly written. It is especially worthwhile for the student of this subject.

Psychology and Psychiatry in Pediatrics: The Problem. Report of the White House Conference on Child Health and Protection. Published by The Century Co. Price $1.50.

The report of the subcommittee on Psychology and Psychiatry in: "Psychology and Psychiatry in Pediatrics: The Problem", is as fair a statement as such a committee could make. Since the chairman was a pediatrician it is evident that no one psychiatric procedure is endorsed. The members of the committee evidently refused to make a series of definite recommendations as to which method of attack should be endorsed. On the whole, the plea of the committee is that doctors in general, and pediatricians in particular, should take some part in controlling the present mental hygiene movement. Whether they should act as leaders or followers depends entirely upon themselves. If they undertake to lead, they must necessarily be familiar with methods of psychology and psychiatry in order that their selection of techniques and attitudes may be intelligent. There are various typical setups and many types of effort are described and the discussion gives a fair indication of the chaos of the present situation and also shows that many people, who look at these important matters from this point of view, are still hopeful that doctors in general will take an adequate and profitable part in the whole movement.